the magazine of STANDARDS

OCTOBER 1961

the magazine of STANDARDS

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Vol. 32 No. 10 OCTOBER, 1961

FEATURES

NEWS

DEPARTMENTS

Published monthly by the American Standards Association, Incorporated, 10 East 40th Street, New York 16, N. Y.

Subscription rates: Companies in U. S. and possessions, $7.00 per year; in other countries, $8.00. Public libraries, schools, and government agencies, in U. S. and possessions, $6.00 per year; in other countries, $7.00. Single copy 60 cents. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879. Indexed in the Engineering Index and the Industrial Arts Index. Microfilm copies can be obtained from University Microfilms, Ann Arbor, Mich.

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ASA

THE COVER: The railroad station at Helsinki is recognized as one of Finland's architectural landmarks. Designed by Eliel Saarinen, it represents one of the early examples of the Finnish school of architecture. "While the massing of the design has the freedom of medieval emplacement, the handling of the detail belongs entirely to the twentieth century," points out *The Art of Architecture*. "The force of the design inheres in the masterly adjustment of the parts, especially the joining of the public portion of the station to the administrative buildings at the side."

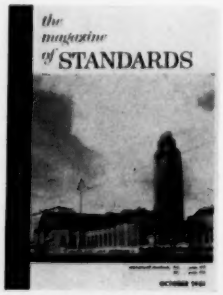


Photo by S. David Hoffman

The "developing countries" have become an important factor in the International Electrotechnical Commission and the International Organization for Standardization, as in all world-wide thinking and programming. (See ISO and IEC reports, pp 292 and 296, and "What the IEC Means to the Developing Countries," p 302.)

notes

It can be expected that the influence of these developing countries will continue to grow economically as well as politically. Note recent decisions to set up an Asian Productivity Organization and to reactivate the Pan American Standards Committee. The PASC decisions have already been reported in THE MAGAZINE OF STANDARDS (July 1961). The Asian Productivity Organization has the distinction of being the first international organization ever formed by the Asian nations themselves. It held its first meeting May 22, 1961, and delegates from eight nations attended: Republic of China; India; Korea; Nepal; Philippines; Pakistan; Thailand; and Japan. Ichiro Oshikawa, director of the Japanese Productivity Center, is secretary general.

Agreements reached by technical committees of the international organizations (ISO and IEC) gradually influence and bring about greater agreement in the standards of the various individual nations. VASCA (the Valve and Semiconductor Association, a British trade association), commenting on the effect of IEC work, points out among other things:

"IEC Recommendations appear to be assuming increasing importance to the developing countries.

"The Common Market countries intend to harmonize their standards through a more complete and uniform implementation of IEC Recommendations.

"The IEC Recommendations are having a much greater influence on UK Military and NATO Specifications. This is most noticeable in the case of semiconductor devices and microwave valves."

This Month's Standards Personality

Miles N. Clair

HIS ELECTION AS PRESIDENT of the American Society for Testing Materials this year honors Miles N. Clair as one of the top men in the country in work on standard specifications and tests. Dr Clair, a member of the Board of Directors of the American Standards Association, where he represents the American Society of Civil Engineers, is president of The Thompson and Lichtner Company, Inc, Brookline, Mass. Soon after he joined the company in 1925 as engineer in charge of testing and inspection, Dr Clair started his outside activities that have brought him his present honor. He became associated (in 1927) with ASTM as his company's representative on ASTM Committees C-1 on Cement and C-9 on Concrete and Concrete Aggregates.

Dr Clair is a graduate from Drexel Institute of Technology with the degree of Bachelor of Science in Engineering, and from Massachusetts Institute of Technology with a Master's degree in Civil Engineering. In 1960, Drexel Institute recognized Dr Clair's achievements and conferred upon him the honorary degree of Doctor of Engineering. He has been instrumental in the development of lightweight concrete roof slabs and in the use of concrete made with fine and coarse cinders for structural purposes. "More than any other engineer, Dr Clair has been credited with developing the use of pre-cast and premixed concrete," said a Distinguished Citizen Tribute presented to him by the City of Philadelphia in September.

Dr Clair has played an active role in national standards activities. He represents the American Society for Testing Materials on the Construction Standards Board of the American Standards Association, and has served as vice-chairman of the Board. He is a past director of the American Concrete Institute, and represents the Institute on ASA Sectional Committee A1, Specifications and Methods of Test for Hydraulic Cements. In recognition of his personal standing in the field, in 1938 he was elected member-at-large on Sectional Committee A59, Building Code Requirements for Reinforced Gypsum Concrete, and has served on the committee ever since. Because of his competence in the subject, he is a member of the committee to revise the section on concrete of the Boston building code. Dr Clair is author of numerous technical papers and of sections of engineering texts and handbooks. He is a recipient of the Clemens Herschel Prize Award.

In his community, Dr Clair is an active member of the ASTM New England District Council, having served on the Administrative Committee on District Activities since 1949, and as chairman in 1958. He is past-president of the New England Section of the ASCE, and past-president of the Boston Society of Civil Engineers.

As a public-spirited citizen, Dr Clair recently received the Bronze Keystone Award for his services to the Boys' Club of America; he is past-president of the Salvation Army Association; and is on the National Council of the USO representing New England.

Photo, courtesy British Standards Institution

The Helsinki School of Economics, meeting place of the ISO General Assembly

One of the many wood pulp plants along the shores of Finland's beautiful lakes, which ISO delegates toured by water coach.

Right—Finland's post office department issued a special ISO postage stamp.

INTERNATIONAL STANDARDS

ISO Meeting in Finland

by VICE ADMIRAL G. F. HUSSEY, JR, USN (Ret)
Managing Director, American Standards Association

EVERY THREE YEARS the International Organization for Standardization holds a General Assembly meeting of all ISO member bodies, in addition to the regular meeting of the ISO Council. Each triennial assembly is held in a different country. In June of this year the place was Helsinki, Finland, the first time a small country has undertaken the task of organizing these international meetings of the delegates from all over the world.

With Finland's President, Urho Kekkonen, present,

The open-air markets did a thriving business outside Helsinki's Government buildings in the center of town. Nowhere is one far from the waterfront, as indicated here.

Photos of Finland and Switzerland in this issue are by S. David Hoffman, except where otherwise indicated.

the General Assembly was opened at a solemn and impressive ceremony in the auditorium of Kauppakorkeakoulu, the Helsinki School of Economics. The delegates were welcomed by ISO's president, Professor E. Wegelius, president of the Finnish standards body, and by Dr Ahti Karjalainen, Minister of Commerce and Industry.

Expressing his pleasure on behalf of the Finnish Government that a technical event of such importance as this ISO Conference was taking place in Finland, Dr Karjalainen commented, "Under-developed countries are no longer under-developed; they are already countries in process of development. It is unnecessary for me to point out to you that this work of yours is decisive in the development just mentioned. It helps to lead development in the right direction, to choose technical solutions which already have proved to be the best and most appropriate ones. It is no longer enough that different countries are standardizing in their own way. The barriers to technical cooperation are increasingly being abolished, so international cooperation in the field of standardization also becomes more and more important."

The national standards bodies of 35 countries had delegates at the General Assembly, two others being represented by proxy. Delegates representing all of the 14 countries that are members of the ISO Council attended the Council meetings.[1]

As part of the over-all standardization program, 11 technical committees also held meetings in Finland from June 5 to June 17.[2] Professor Wegelius explained, "Our international organization with its more than 100 technical committees is so great today that it has not been possible for Finland to organize meetings for all the technical committees that wished to meet on this occasion. But Italy has come to her aid and invited those technical committees that do not meet in Helsinki to hold their meetings in Turin in connection with the celebration of the First Centenary of Italian Unity."[3]

Twenty-eight delegates represented the United States in Finland. Vice Admiral G. F. Hussey, Jr, USN (Ret), managing director of the American Standards Association, was present not only as U.S. delegate but also in his capacity as vice-president of ISO. John R. Townsend, president of ASA, and Harold Massey, chairman of the Standards Council, were ASA delegates to the General Assembly. The other 25 members of the U.S. delegation spoke for U.S. industry at meetings of ISO/TC 1, Screw Threads; ISO/TC 41, Pulleys and Belts (including Vee-belts); ISO/TC 43, Acoustics; ISO/TC 58, Gas Cylinders.

A number of actions important to the future of international standardization were taken by the Assembly. One was election of officers—A. Y. Viatkine, USSR, was elected president for a three-year term starting in January, 1962. Jean Birlé, France, elected vice-president, took office immediately since this new term runs from January 1961. The treasurer, Jacques de Saugy, was re-elected.

Another important action was election of five new members of the ISO Council: the national standards bodies of Czechoslovakia, Germany, India, New Zealand, and USSR. Germany and the USSR were re-

[1] Council members for 1961 were the standards bodies of: Austria, France, Germany, Israel, Italy, Netherlands, Norway, Poland, Rumania, Switzerland, United Kingdom, USA, USSR, Yugoslavia.

[2] Screw threads, ISO/TC 1; Raw materials used in paper manufacturing, ISO/TC 6/SC 5; Preferred numbers, ISO/TC 19; Pulleys and belts (including Vee-belts), ISO/TC 41; Acoustics, ISO/TC 43; Electroacoustics, IEC/TC 29; Welding, ISO/TC 44; Hewn, sawn, and planed timber, ISO/TC 55; Gas cylinders, ISO/TC 58; Building construction, ISO/TC 59; Marks indicating conformity with standards, ISO/TC 73.

[3] These committees have met or are meeting in Turin this year: Ball and roller bearings/Airframe bearings, ISO/TC 4/SC 3; Ball and roller bearings, ISO/TC 4; Limits and fits, ISO/TC 3; Office machines, ISO/TC 95; Automobiles/Mechanical and braking section, ISO/TC 22; Drawings (general principles), preliminary work, ISO/TC 10/SC 1; Agricultural machines, ISO/TC 23; Agricultural tractors, ISO/TC 22T; Plastics, ISO/TC 61.

Finland is proud of its modern school buildings—one of Helsinki's new high schools boasts this library.

elected. The others replace the national standards bodies of Israel, Rumania, and the Netherlands. J. Wodzicki of Poland was named to serve, with the vice-president and treasurer, as the third member of the supervisory committee which assists the ISO President.

During the meetings the rules for membership in ISO were clarified and a formal process set up for the suspension of members who fail to pay dues for one year, and their expulsion if they have failed to pay after three years.

The Assembly went on record in favor of holding grouped meetings of technical committees at more frequent intervals than the three years at which they are held at present. It has been the practice for individual committees to meet whenever the committee finds it necessary, but up to the present time no policy has been in effect making it possible for a large number of committees to meet at the same time except during the triennial General Assembly meetings.

The ISO Council, at its meetings June 9-13, acted on new projects and recommended a number of policies to speed committee action and bring about greater coordination.

Four new technical committees were approved. These are:

Iron Ores, ISO/TC 102. Proposed by Japan. The secretariat has been assigned to the Japanese standards association. *Scope*: Standardization of methods of sampling, reducing, size and moisture determination, and chemical analysis for iron ores.

Packaging Dimensions, ISO/TC 103. Proposed by Poland. The secretariat will be assigned later.

Conveyors, Vertical Hoists and Bucket Elevators, ISO/TC 101. Secretariat has been assigned to the German standards body.

Freight Containers, ISO/TC 104. Proposed by the USA. Secretariat assigned to the American Standards Association. The first meeting of this committee was being held in New York September 11-13.

Work on international standards for protective helmets was referred to ISO/TC 94, and the title of this committee has been revised to read "Personal safety, protective clothing and equipment." The United Kingdom (British Standards Institution) is to continue as secretariat of the enlarged committee.

The ISO General Secretary reported that 35 new ISO Recommendations have been approved during the past year.

In line with its policy to speed the work of the technical committees, the Council authorized ISO committees whose work has a close relation to that of IEC committees to arrange for adequate liaison and joint action where needed. It also requested the technical committees to follow the rules established by ISO Technical Committee 12, Quantities, Units, Symbols, Conversion Factors, and Conversion Tables, and asked the committees to give their reasons in any case where these rules are not being followed.

Action to make it possible for a member participating in the work of a committee to abstain from voting on a proposed recommendation will be of special interest to some of the U.S. committees working on ISO projects. The new rule recognizes that even though a member body may be participating in the work of a project, there may be a particular proposal that is not of interest and on which the participating member lacks the necessary competence to vote. When such a case occurs, a participating member may now advise the secretariat that it lacks competence or interest in the particular subject under discussion and that it will abstain from participation in the discussions and from voting at all stages. If the participating member has so advised the secretariat, it may abstain from voting on the draft recommendation.

The Council also recommended that each technical committee set up a drafting committee to see that draft recommendations are well edited and are presented in the best editorial form possible.

Following the same principle, it was reported that the scopes of all the technical committees had been revised during the past year to put them into a standardized style. The ISO Council approved the revised scopes and sent them to the secretariats of the committees for their acceptance.

The recommendations of the Standing Committee for the Study of Scientific Principles of Standardization (STACO) have been referred to the technical

Mr A. Y. Viatkine, USSR, ISO's newly elected president, takes office in January, 1962.

committees and to the secretariats for comment. These concern the definition of "standardization," a recommendation for coordination of the inch and metric standards, and a number of suggested principles for the guidance of technical committees in their work (see STACO report, page 301).

From now on, according to the Council's action, any member body seeking a secretariat must inform the ISO if it lacks personnel who have a good working knowledge of one of the three official ISO languages (English, French, Russian). This will be taken into consideration in assigning the secretariat. However, technically competent members of committees, including the officers of committees, may use their own language if they are not competent in one of the official languages. In this case the member body of the chairman, the secretary, or the person wishing to speak must provide the necessary means of interpretation. In any case, resolutions must be worded in one of the official languages.

The Council appointed H.A.R. Binney as liaison officer for ISO to the Intergovernmental Maritime Consultative Organization.

Looking to the future, the Council acted to appoint a working group to study a suggestion that ISO promote a knowledge of standards as a help to the development of new countries. The group is to submit a recommendation at the next Council meeting.

On this same line, the Council noted with satisfaction the creation of a Division of Technical Sciences in the Department of Exact and Natural Sciences of UNESCO. It voted to suggest to UNESCO that the Division maintain close contact with ISO so that UNESCO may encourage standardization as a technological body of knowledge among the countries in process of industrialization.

A survey being made by the General Secretary of ISO to determine how widely ISO Recommendations are being used is not yet completed. However, Admiral Hussey, managing director of ASA, called attention to the fact that the catalog of American Standards indicates those American Standards and ISO Recommendations which are in agreement. Mr Viatkine reported that the USSR has incorporated 95 ISO Recommendations either fully or in part in USSR national standards.

The Finnish standards body and the committees in charge of the meetings provided many interesting special events, including tours of a number of factories and sawmills for the information of delegates to the technical committees, and entertainment for the delegates outside working hours.

Dr Ahti Karjalainen, Minister of Commerce and Industry, was host at a reception for the General Assembly in the State Council Banquet Hall. A banquet for all delegates was held at Kalastajatorppo (the Fisherman's Hut). A tour gave the delegates an opportunity to visit the Institute of Technology and the new buildings of the Technical Research Institute of the State in the "Finnish Tech Town." The tour ended at the restaurant Servin Mokki in the students' dwelling area in Tech Town. An all-day excursion took the delegates to Tampere (Finland's largest industrial area), where lunch was given by the city; to Valkeakoski, where afternoon refreshments were provided by the town; and by water coach through the waterways of "Silverline" to Aulanko.

A particularly interesting event was a cruise at a speed of 40 knots on the Hydrofoilship Sirena, the only ship of its kind in the Baltic, and one of the very few in the entire world. This type of ship is built on two "cross-seated, streamlined foils" which lift the hull out of the water as soon as the speed of the ship has increased to 16 knots. "Thus the waves do not affect the craft's hull, which is maintained above water level," it was explained, "and the reversed friction is reduced by more than 50 percent."

Special sightseeing trips had also been arranged for the ladies.

The delegates were all greatly impressed with the cordiality of their Finnish hosts who did everything possible to make sure that the meetings ran smoothly and that the delegates enjoyed their visit to Finland. All were impressed by the fact that the Post Office Department of Finland, in ISO's honor, issued a special ISO 1961 Helsinki stamp which was available for use during the meetings.

Plans have already been made to hold the ISO Council meeting in Geneva, Switzerland, the last week in June or the first week in July in 1962. It has been left to the officers to arrange for the next General Assembly.

The ISO Council at work in Helsinki

the IEC in Switzerland

by S. DAVID HOFFMAN

"IEC" in flowers in the garden of the Kursaal, Interlaken, where the opening session of IEC was held.

AT INTERLAKEN in scenic Switzerland, some 950 delegates representing the national standards bodies of 28 nations attended the twenty-sixth General Meeting of the International Electrotechnical Commission, June 18 through June 30. The delegates were accompanied by 350 ladies.

Interlaken is a tourists' center and admirably equipped for the tourist trade, but it does not have facilities for such large technical meetings as those held during the IEC General Meeting. Nevertheless, by making use of nightclubs, bars, churches, schools, the post office, and similar unusual meeting places, ample room was provided for the committees. True, it was rather startling to see technical committee delegates meeting adjacent to the bar, or on the band stand, but the delegates took it all in good spirits and much work was accomplished at the meetings.

HIGHLIGHTS OF IEC MEETING

G. de Zoeten, Netherlands, elected president

Dr A. Roth re-elected treasurer

Venezuela and Greece elected to membership—IEC now has 36 member countries

Seventy-four draft recommendations to be circulated under the Six Months' Rule

Twenty-four documents cleared for publication as IEC Recommendations

New Committee on Winding Wires authorized—secretariat Germany

United Kingdom, Rumania, and Japan replace India, Netherlands, and Norway on Committee of Action

H. Blackmon, USA, named as member of working group to study revision of IEC statutes

International chairman of technical committees named—E. F. Seaman, USA, appointed international chairman of IEC/TC 50 and SC 50a

USNC named secretariat of IEC/TC 53, Computers and Data Processing; Dr A. B. Credle, IBM, chairman

IEC dues increased; USNC assessment about $15,680 per year

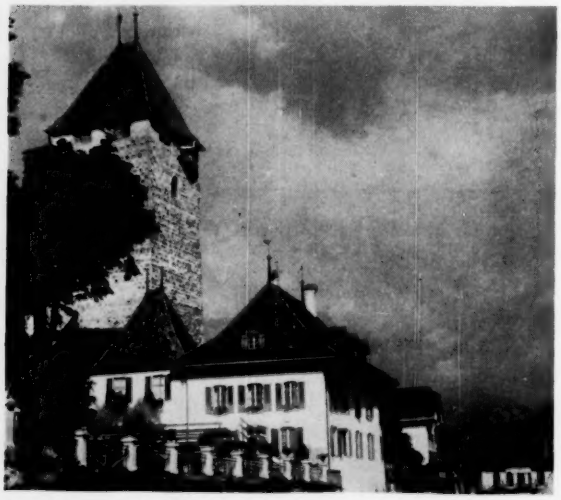
At the opening session, held in the Theater of the Kursaal, the speakers stressed the importance of standardization to the economy in general and to Switzerland in particular. The meeting opened with a welcoming address by Mayor H. Junker of Interlaken, followed by Dr P. Waldvogel, president of the Swiss Electrotechnical Committee, and Dr I. Herlitz, president of the IEC.

The Seventh Charles le Maistre Memorial Lecture, "What the IEC Means to the Developing Countries," was presented by Mohammed Hayath, president, Indian National Committee of the IEC (page 302).

Twenty-two IEC technical committees and 24 subcommittees met at Interlaken. In addition, a number of working groups met to prepare specific recommendations for consideration by the committees. The work of these committees resulted in the decision to circulate 74 draft recommendations for approval under the Six Months' Rule. (See list on page 300). Under this rule a letter ballot is taken, with a deadline date six months after the date of circulation. In addition, 24 documents were approved for publication as IEC Recommendations.

The number of documents circulated has tripled in the last five years, IEC General Secretary L. Ruppert reported. The Council of IEC, in considering the question of finances and the treasurer's proposal for an increase in annual dues, after much discussion, voted that dues of the national committees be raised 40 percent from their present levels. The annual dues of the U.S. National Committee thus were raised to approximately $15,680. These funds must be forthcoming from industry, since they are taken directly out of the budget of the American Standards Association. Also, arrangements must necessarily be made to handle the increased volume of work which will result as a natural concomitant to providing more funds for the IEC Central Office. It was noted that the Central Office would employ two more engineers and thus would be in a better position to issue IEC documents. It was agreed that the Council, at its meeting in Bucharest next year, would consider a revision of the scale of dues paid by each national committee.

The Committee of Action had taken two important decisions by correspondence since the New Delhi meeting in 1960, it was reported: (1) The American Standards Association was appointed as the registration authority in connection with the IEC Code for the Designation of Photographic Projection Lamps, which has been approved by IEC and is being published. ASA will thus assign and record the lamp identification codes, assuring interchangeability for photographic projector lamps such as are used by amateurs in their slide projectors. This code system will make it possible for the ultimate consumer to order his replacement lamp and be assured of its



Luncheon at the Chateau de Spiez was served by young ladies in 13th Century costume.

interchangeability with his old lamp, even if made by different manufacturers in any country. It will also aid order-filling and help solve inventory problems of photo supply shops and distributors. (2) The U.S. National Committee was appointed as secretariat of IEC/TC 53, Computers and Data Processing. As secretariat, the USNC nominated Dr A. B. Credle, manager for advance planning of the International Business Machines Corporation, to be international chairman of IEC/TC 53. He was accepted unanimously. It was reported that TC 53 plans to meet in London, November 15 to 17, 1961, and will prepare a scope for approval by the Committee of Action. Since the work of IEC/TC 53 concerns the type of equipment on which ISO/TC 97, Computers and Information Processing, is working, it was the opinion that a coordinating committee or steering committee is needed. After some discussion, the IEC Central Office was authorized to approach the ISO General Secretariat with a view to setting up such a coordinating committee. The secretariat of both IEC/TC 53 and ISO/TC 95 is held by the USA; therefore, it was noted that coordination between the two committees should be relatively easy to effect.

There has been discussion for a number of years regarding the possibility of conflict and overlap of scopes of IEC Technical Committee 47 (and its predecessor SC 39-2), Semiconductor Devices, and IEC/SC 22B, Semiconductor Rectifiers. The Committee of Action was happy, therefore, to accept the following proposals which, it is believed, will clear up the apparent difficulties:

Technical Committee 47

Title: Semiconductor Devices

Scope: To prepare international recommendations for semiconductor devices [the term "semiconductor devices" includes, but is not limited to, signal diodes, transistors, power rectifier diodes (power rectifier cells), controlled rectifiers, tunnel diodes, parametric diodes, Hall effect diodes, microstructures, etc, but not equipment using such devices], including the factors which are needed to characterize these devices and to ensure their interchangeability, to facilitate understanding between device manufacturers and the users, and to enable the device manufacturers to provide useful information to the users of the devices.

This includes, but is not limited to:

Definitions and symbols for the terms used (in cooperation with TC 1, TC 3, and TC 25)

Essential ratings and characteristics

Methods of measuring the characteristics of the different parameters, and method of measurement of the working conditions

Essential dimensions and any other mechanical factors

Other defining characteristics involving interchangeability.

NOTE: It is recognized that there is some common interest between SC 22B and TC 47, and these two committees shall maintain liaison to avoid conflicting recommendations.

Subcommittee 22B

Title: Semiconductor Converters

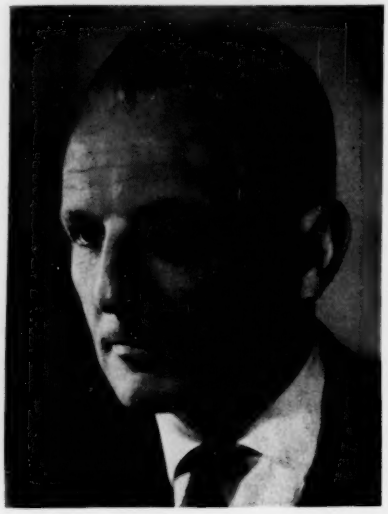
Scope: To prepare international recommendations regarding semiconductor equipments for static power conversion, e.g.,

Traffic signs using standard symbols guard the population in this picturesque Swiss town on the way to the Jungfrau.

GIJSBERTUS DE ZOETEN, managing director of Cooperating Electricity Producing Undertakings, the Netherlands, is the newly elected president of the International Electrotechnical Commission. He has been professor extraordinary at the Technical University of Delft since 1947.

Professor de Zoeten has been active in international standardization work for nearly 35 years. Since 1956 he has been president of the Netherlands National Committee of the IEC. Throughout his career he has served on various technical committees of the IEC, and since 1938 has been chairman of the committee on switchgear.

Professor de Zoeten is vice-president of the Advisory Committee on Radio Interference in the Netherlands, a member of the Netherlands advisory committee concerned with planning of overhead high-voltage lines, and a member of the Netherlands Society for Industry and Trade. His published works have dealt with measuring techniques, dielectrics, switchgear, cable, high-voltage generators, and network systems. In 1950, he was made a Knight of the Order of the Netherlands Lion.



rectification, inversion, frequency changing or d-c transformation, and special requirements for components (e.g., transformers, semiconductor devices, fuses, etc) used in these equipments.

NOTE: It is recognized that there is some common interest between SC 22B and TC 47, and these two committees shall maintain liaison to avoid conflicting recommendations.

The French presented a number of proposals concerning procedures for working groups and experts' committees, and for liaison between technical committees. It was agreed, however, that rather than discuss these proposals during the Committee of Action meeting a separate meeting will be called of the secretaries of the national committees most concerned with application of the procedures. This group will report its conclusions to the Committee of Action in 1962. The IEC president, Dr I. Herlitz, expressed the opinion that it would be useful if secretaries of the national committees could hold meetings frequently to discuss problems of general interest.

Technical Committee 31, Electrical Apparatus for Explosive Gas Atmospheres, had suggested that a new technical committee be set up to develop recommendations for dust-tight enclosures for electrical apparatus. The Committee of Action agreed, however, that new technical committees should be formed only when absolutely essential, and asked TC 31 to consider adding protection against flammable dusts to its own work. It also suggested the possibility that work already accomplished in SC 17B, Enclosures for Switchgear and Controlgear, could be expanded to cover enclosures for more general application.

Formation of a new technical committee to deal with winding wires in general was authorized by the Committee of Action as an outgrowth of the work handled by SC 46D, Winding Wires. Germany, which had held the secretariat of SC 46D, was appointed secretariat of the new technical committee. Upon nomination of the German delegation, Mr L. van Rooij of the Netherlands was appointed international chairman.

The French National Committee had proposed extending the scope of TC 41, Protective Relays, to cover all relays except those for telecommunication and electronic equipment. After some discussion, it was decided that TC 41 should prepare a proposal for extension of its scope along the lines of the French proposal, but should give priority to its work on protective relays.

W. H. Hamilton of the U.S. had resigned as international chairman of IEC/TC 45, Electrical Measuring Instruments Used in Connection with Ionizing Radiation. Upon nomination by Germany, as secretariat of the committee, J. Auzouy of France was appointed chairman to replace him.

For IEC/TC 50, Environmental Testing Procedure for Electronic Components and Equipment, and SC 50A, Components, Ellsworth F. Seaman of the U.S. was nominated by the United Kingdom as international chairman and was so appointed.

THE HIGHEST ORGAN of the IEC, the Council, met on June 30 at the very fine Chateau de Spiez. This picturesque castle was made even more interesting by the fact that the luncheon served there was attended by young ladies dressed in the traditional costumes worn during the era of the castle's great days (about the 13th century).

At the Council meeting it was noted that applications for membership from the national committees of Venezuela and Greece had been unanimously accepted; therefore, the number of national committees in the IEC now stands at 36. Dr E. Wegelius, president of the International Organization for Standardization, and Henry St Leger, ISO general secretary,

both spoke on the excellent cooperation between ISO and IEC. Mr St Leger noted that 23 ISO technical committees have close liaison with technical committees of IEC.

The Rumanian National Committee had suggested changing the statutes of the Committee of Action to increase the number of members of the committee. The statutes at present limit the number to nine members. Rather than consider this item by itself, the Council agreed to appoint a small ad hoc working group to consider revision of the 1949 statutes of IEC. The president of IEC appointed Mr Hendley Blackmon, president of the USNC, as a member of the ad hoc working group.

Professor G. de Zoeten, president of the Netherlands Electrotechnical Committee, was unanimously elected and inducted as president of IEC, and Dr A. Roth was re-elected as treasurer. Professor de Zoeten necessarily resigned as international chairman of IEC/TC 17, Switchgear and Controlgear, which he had served well and long, and Mr E. Maggi of Italy was nominated and approved as international chairman in his stead.

The United Kingdom, Rumania, and Japan were elected for a nine-year term to the nine-member Committee of Action, to replace India, Netherlands, and Norway.

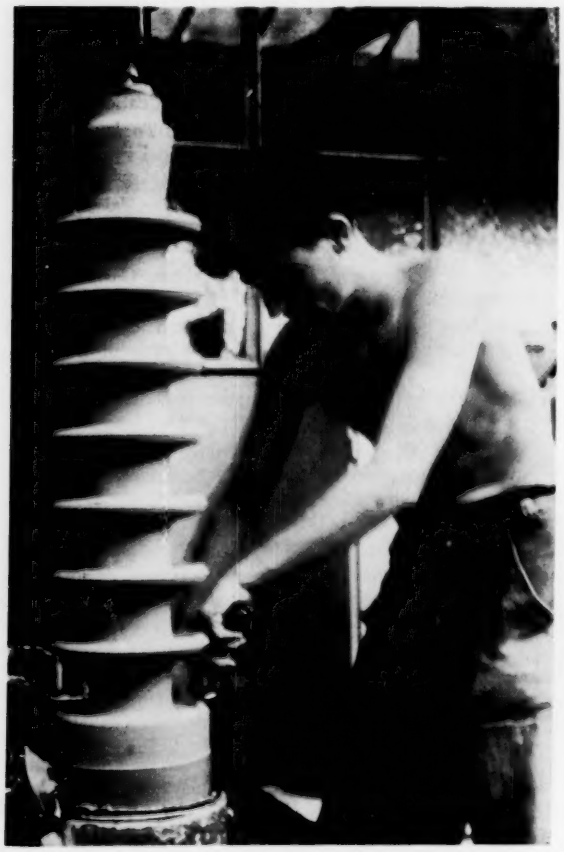
IEC President Dr I. Herlitz, and Mrs Herlitz, on the trip to the Jungfrau.

The delegates and their ladies were privileged to participate in many fine social events, technical visits, tours, and excursions arranged by the Swiss Electrotechnical Committee. These were almost too numerous to mention. Among them was an excursion to the Jungfrau, to the works of Brown, Boveri & Co, Ltd, at Baden (manufacturers of electrical machines and equipment and thermal machines), to the works of Sprecher & Schuh Ltd at Aarau (modern manufacturers of quality electrical switchgear and distribution switchboards of all types as well as low-oil-content switches). Many of the delegates were interested in visiting P.T.T. (the automatic telephone exchange) and Radio Suisse (the ultra-short-wave radio and television transmitter station) at Berne. This was particularly interesting since Radio Suisse is the headquarters of Professor Willie Furrer, international chairman of IEC/TC 29 on Electroacoustics.

Some of the delegates were also privileged to take advantage of the post-session tours, including an eight-day study tour of the sites, dams, and hydro-electric generating stations of six power-generating companies.

Arrangements for the 962 General Meeting, to be held in Bucharest, Rumania, are well in hand, it was reported. Support has been offered by the Rumanian Government, making it possible to receive about 900 participants. Professor R. Radulet, who attended the meetings of the Committee of Action, said that the meetings will be held in the Law School of the University of Bucharest, from June 24 to July 7, 1962.

The 1963 General Meeting will be held in Venice, Italy. Italy's delegate, L. Maggi, informed the Committee of Action that it will be possible for Venice to accept 800 participants. The dates are definitely fixed from May 27 to June 8, 1963.



Semi-automatic methods are used to form insulators at the Langenthal Porcelain Factory, visited by IEC delegates.

U.S. delegates Hendley Blackmon and Wm A. McAdams point out beauties of the Swiss scenery, from the Jungfraujoch.

The General Secretary reported that no invitation had yet been received for a general meeting in 1964. Professor H. Yamashita of Japan, on behalf of the Japanese National Committee, issued an invitation for the 1965 or 1966 General Meeting. It was agreed that this invitation would be considered further at the IEC meeting in 1962.

DOCUMENTS TO BE CIRCULATED UNDER THE SIX MONTHS' RULE

TC 3, *Graphical Symbols*: Semiconductors; Architectural diagrams

TC 4, *Hydraulic Turbines*: International code for field tests of storage pumps

TC 9, *Electric Traction Equipment*: Rules for the testing of electric rolling stock on completion of construction and before entry into service

TC 10, *Insulating Oils*: Method of artificial aging for insulating oil tests; Method for the determination of the electric strength of insulating oils

TC 13, *Measuring Instruments*: Alternating-current watt-hour meters class 1.0

TC 18, *Electrical Installations in Ships*:[1] Four parts of the second edition of IEC Publication 92, Chapters 1 through 15

TC 20, *Electric Cables*: Tests on fully impregnated paper-insulated metal-sheathed cables for alternating voltages from 10 kv up to and including 66 kv (excluding gas-pressure and oil-filled cables)

TC 22, *Static Power Converters*: Mercury-arc inverters

TC 29, *Electroacoustics*:[1] New clauses and amendments to Part B—Sound system amplifiers, Part C—Microphones, and Part E—Auxiliary passive elements, of IEC Publication 89; Methods of measuring loudspeakers; Pure-tone audiometers for general diagnostic purposes; Pure-tone screening audiometers; Precision sound level meters; Method for specifying the characteristics of vibration pickups for shock and vibration measurements

TC 30, *Extra-High Voltages*: Voltages above 220 kv

TC 33, *Power Capacitors*: Specifications for power capacitors

TC 34, *Lamps and Related Equipment*: Starters for fluorescent lamps; Schedule for characteristics of high-pressure mercury fluorescent discharge lamps; Gages for lamps with E.14 caps and E.14 lampholders; Bayonet automobile caps and gages; Gages for P45t-41 pre-focus cap (continental asymmetric type for automobiles); Position of holder thread and central contact for E.5 and E.10 lampholders; P15s pre-focus cap, holder and gages; G17q pre-focus cap and gages; Gages for G.5 cap; G10q cap and holder for circular fluorescent lamps; Lighting fittings for tubular fluorescent lamps

TC 38, *Instrument Transformers*: Revision of IEC Publication 44, Part III—Requirements for protective current transformers

TC 39, *Electronic Tubes and Valves*: Revisions of four existing IEC Recommendations (Sheets 67-I-5a; 67-I-20a; 67-I-21c; and 67-III-2); Additions to IEC Publication 67, Part I; Octal bases with coaxial leads; Reference line gages Nos. G 112 and G 114 from Document 39-1 (Secretariat) 20; Measurement of warm-up time of cathode and heater; Measurement of the effect of mechanical shock (impulse) excitation of electronic tubes and valves

TC 40, *Capacitors and Resistors*: Ceramic dielectric capacitors Type II; Radio interference suppression capacitors (not for use on motor vehicles); Fixed metallized dielectric capacitors for direct voltage for general-purpose application; Polyethylene terephthalate (polyester) foil capacitors for direct current; Revision of IEC Publication 80—Fixed paper capacitors for direct current; Composition variable resistors; Noise test (supplement to IEC Publication 109); Noise test (supplement to IEC Publication 115)

TC 44, *Electrical Equipment of Machine Tools*: Electrical equipment of machine tools; Electrical insulated conductors for use in machine tools

TC 46, *Cables, Wires, and Waveguides for Telecommunication Equipment*: Test for dimensional stability; Cables with dielectric of cellular polyethylene; Unscreened, balanced cables, 300 ohms; Cables with a dielectric of polytetrafluorethylene; Cable with solid dielectric of polyethylene 11.5-mm diameter over dielectric; Flat waveguide with a ratio of height to width of 1:4; Series of waveguides with rectangular inside cross section and circular outside cross section

TC 47, *Semiconductor Devices*: Definitions of the terms retained for practical vocabulary relating to semiconductor devices; Mechanical standardization—Recommended practice for the preparation of drawings of semiconductor devices; Mechanical standardization—Dimensions of semiconductor devices

TC 51, *Ferromagnetic Materials*: Expression of losses for component parts; Additions to IEC Publication 125—Definitions for tensor permeability, definitions for variability; Addition to IEC Publication 133—Dimensions for coil formers for pot cores of ferromagnetic oxides; Coefficient and symbols relating to dynamic magnetostriction; Calculation of the effective parameters of magnetic piece parts; Cores of broad-band transformers of ferromagnetic oxides for telecommunication; Cores of tuned transformers of ferromagnetic oxides

The following technical committees of IEC met at Interlaken:

TC 3, Graphical Symbols; TC 4, Hydraulic Turbines; TC 8,

[1] TC 18 met in Stockholm, TC 29 in Helsinki.

Standard Voltages, Current Ratings and Frequencies; TC 9, Electric Traction Equipment; TC 10, Insulating Oils; TC 12C, Radio Transmitting Equipment; TC 13, Measuring Instruments; TC 13A, Integrating Meters; TC 13B, Indicating Instruments; TC 13C, Electronic Measuring Instruments; TC 14, Power Transformers; TC 14B, On-Load Tap Changers; TC 20, Electric Cables; TC 22, Static Power Convertors; TC 22A, Mercury-Arc Rectifiers; TC 25, Letter Symbols and Signs; TC 28, Insulation Coordination; TC 30, Extra-High Voltages; TC 33, Power Capacitors; TC 34, Lamps and Related Equipment; TC 34A, Lamps; TC 34B, Lamp Caps and Holders; TC 34C, Auxiliaries for Discharge Lamps; TC 34D, Luminaires; TC 37, Lightning Arresters; TC 38, Instrument Transformers; TC 39, Electronic Tubes and Valves; TC 40, Capacitors and Resistors; TC 41, Protective Relays; TC 44, Electrical Equipment of Machine Tools; TC 46, Cables, Wires, and Waveguides for Telecommunication Equipment; TC 46A, R. F. Cables; TC 46B, Waveguides; TC 46C, Cables for Telecommunication; TC 46D, Winding Wires; TC 47, Semiconductor Devices; TC 51, Ferromagnetic Materials.

"Standardization" Defined by ISO Committee

by S. David Hoffman

A DEFINITION of standardization and a recommendation on coordination of inch and metric standards were the most important accomplishments of the Standing Committee for the Study of Scientific Principles of Standardization (STACO) at its 1961 meeting. STACO is a committee of the International Organization for Standardization. It met in Stockholm, Sweden, from May 31 to June 3, 1961. Because of the leadership of its eminent chairman, Dr A. Caquot, France, and the excellent services and meeting places provided by the Swedish Standards Association, the committee managed to work its way through a heavy agenda.

As a result of the meeting, a number of recommendations were adopted and transmitted to the ISO Council. Of general interest is the resolution recommending the definition of "standardization."

Definition of Standardization Recommended by STACO

Standardization is the *process of formulating and applying* rules for an orderly approach to a specific activity for the benefit and with the cooperation of all concerned, and in particular for the promotion of optimum *over-all* economy taking due account of functional conditions and safety requirements.

It is based on the consolidated results of science, technique, and experience. It determines not only the basis for the present but also for future development, and it should keep pace with advances.

Some particular applications are:

(1) Units of measurement
(2) Terminology and symbolic representation
(3) Products and processes (definition and selection of characteristics of products, testing and measuring methods, specification of characteristics of products for defining their quality, regulation of variety, interchangeability, etc.)
(4) Safety of persons and goods

In addition, STACO transmitted to the ISO Council a document on the coordination of inch and metric standards aimed at focusing attention on the great advantages that would accrue to manufacturers and consumers alike if a single series of sizes were used in standards whenever possible. The document also calls attention to the advantages of presenting a list of corresponding sizes in millimeters and inches as a guide for use by industries in various countries which, if used, would facilitate creation of one international standard instead of two. At the same time, use of these corresponding sizes still permits individual companies to retain their specific measuring systems.

STACO also requested the ISO Council to make it mandatory for the secretariat of a technical committee to include in its report on development of an ISO Recommendation a summary of the technological data on which the recommendation has been based, wherever such data are available. These data should include comparative analyses, national standards, statistical information, results of experimental work, conclusions, and similar material. STACO suggested that the presentation of the data should be made in a brief and convenient form, such as in tables and graphs.

Fundamental considerations to be kept in mind by a technical committee concerning the standardization of industrial products, including raw materials and semi-finished products, were outlined. The document was transmitted to the ISO Council with a suggestion that it be circulated to all member-bodies and to relevant technical committees for their comment.

Much work remains for STACO to consider, including definitions of a great number of terms used in standardization.

It was agreed to accept an invitation extended by Dr Lal Verman, director of the Indian Standards Institution, to meet next year in India. In the event that this location may be found unsuitable because of distance, it was agreed that the invitation graciously extended by J. Ordon of Poland to meet in Warsaw would be accepted.

The Seventh Charles le Maistre Memorial Lecture

THE LE MAISTRE LECTURE is given annually in memory of Charles le Maistre who gave outstanding service to the International Electrotechnical Commission during his 49 years as General Secretary. The first six lectures were given by Andre Lange, France; Clarence H. Linder, USA; Professor Reginald O. Kapp, United Kingdom; Professor Dr Richard Vieweg, Germany; A. M. Nekrasov, USSR; and Professor Gijsbertus de Zoeten, Netherlands.

MOHAMMED HAYATH, president of the Indian National Committee of IEC, presented the seventh lecture at Interlaken this year. Mr Hayath, who is director (technical) of Heavy Electrical (India) Limited, is in complete charge of technical planning and coordination for the three heavy electrical projects in India.

After graduating from the University of Mysore in 1923 with a bachelor's degree in electrical and mechanical engineering and working with the Public Works Department of the Government of Mysore for several years, Mr Hayath was nominated by the Government for training in the USA. He received his B.S.E.E. degree from Union University, Schenectady. On his return to India, Mr Hayath served in the Electrical Department of the Government of Mysore from 1930 to 1952, part of the time as chief electrical engineer.

In 1952, Mr Hayath went to Bangkok as power consultant and chief of the Power Section of the United Nations Economic Commission for Asia and the Far East, returning to India in 1954 as the Member (Hydro-Electric), Central Water and Power Commission, Ministry of Irrigation and Power, Government of India. He was appointed chairman of the Central Water and Power Commission in 1958 and served until March 1961. In his work for the Government of India, Mr Hayath was responsible for the initiation, coordination, and execution of all power development projects throughout the country under the two Five-Year Plans.

What the IEC Means to the Developing Countries

by MOHAMMED HAYATH

Excerpted from the lecture presented at the General Meeting of the International Electrotechnical Commission, Interlaken, Switzerland, June 19, 1961.

IN THE COUNTRIES of East Asia, which includes India, development in any real sense of the word started only very recently. A totally different picture is emerging today, with rapid industrialization gaining momentum. Accordingly, IEC's work and knowledge, and the experience of the large number of experts who work on its committees, would be of the greatest value to the developing countries at this stage.

Production of electrical energy in the world, and in most of the developed countries, has been doubling every ten years, approximately. However, the rate of increase in the developing countries has been substantially higher in recent years, as may be seen from data on electricity production, taken from the Statistical Bulletin published by the United Nations (see chart, page 304).

In India, the real impetus for industrial development came with independence, 14 years ago. In the electrical supply industry, at the beginning of the first Five-Year Plan (April, 1951), the installed capacity was 2.3 million kilowatts. By the end of March, 1961, it was 5.7 million kw. In the third Five-Year Plan, ending March, 1966, the program is to add 7.7 million kw. A nationwide load survey has indicated that the installed capacity required in the country by the end of the third Five-Year Plan would be about 13.8 million kw. The anticipated demand is likely to be in excess of the assessment made. Thus, India is at the threshold of very large industrial expansion.

In the case of Ceylon, the installed capacity in 1951 was 52,700 kw; it rose to 61,500 kw in 1956, and to 93,300 kw at the end of 1958.

In the Federation of Malaya, the installed capacity in 1951 was 132,800 kw; it rose to 186,400 kw in 1954, and to 294,700 kw at the end of 1958.

In Indonesia, the installed capacity in 1951 was 178,600 kw; it increased to 216,600 kw in 1954, and to 262,500 kw in 1958.

In Pakistan, the installed capacity in 1951 stood at 116,800 kw; it rose to 176,700 kw in 1954, whereas by 1957, it rose to 267,300 kw.

In Thailand, the installed capacity in 1951 was 42,700 kw; in 1954 it rose to 81,500 kw, and in 1958 it came up to 150,400 kw.

At this stage, it is desirable that the developing countries should adopt standard practices relating to both electricity supply and manufacture of electric equipment, and that they draw upon the rich experience of IEC.

Professor de Zoeten, in his lecture at New Delhi, showed that the system voltage in the United Kingdom and Germany had a tendency to double in 20 years. This is true in India, too. Our 110-kv and 132-kv systems were introduced over 25 years ago, and we started constructing our first 220-kv lines about 3 or 4 years ago. However, we expect that a change from 220 kv to 380 kv, for which initial planning studies are currently in progress, may take place in about 10 years. In Pakistan, Burma, and a few other countries, transmission systems of 220 kv are being commissioned.

In the initial stages of building up the economy, the developing countries go forward up to a point by importing equipment from other countries, and by exchanging raw materials and semi-processed goods. As the country's own economy gains a foothold through the establishment of certain basic industries, the time comes for more and more machinery and equipment to be made within the country. In the highly technical field of electric equipment, the first phase of manufacture will naturally be limited to simple power-consuming and distributing equipment, namely lamps, cables, small transformers, motors, domestic appliances, and the like. Even during this period of initial development, electrical energy is required in increasing quantities, and for this purpose, large boilers, generating plants, and transformation equipment will necessarily have to be imported. Then a start will have to be made to manufacture the larger and heavier equipment progressively within the country, and thus move towards self-sufficiency. At the rate at which power demand in the country is growing, it is not likely that the internal manufacturing capacity will catch up with our total needs for a long time. All that can be expected is that the volume of manufacture of small and medium items will progressively reach self-sufficiency; but some of the larger sizes of machines and more complicated equipment may still have to be imported for quite some time yet.

Industrial development in India is proceeding on a planned basis, and it is an essential element of planning to have standards. While we have taken liberally of the knowledge and experience available in the IEC, it has become necessary to evolve national standards which are distinct in character and suitable for application to local conditions.

We have come across certain problems when a product is made by different industrial plants, each one of which is working with the collaboration of a different foreign country. More often than not there are wide variations in the different national standards of the collaborating foreign countries to which the products conform. In the process of framing a national standard, it becomes a matter of compromising among the standards which several manufacturers seek to follow. It would be of great advantage to us if the IEC recommendations for those products had already been fully accepted and implemented in the national standards of the technologically advanced countries with whose collaboration industrial plants are set up in developing countries. At the same time, it would not be right nor practicable to select one of the standards in preference to the others as it would in effect rule out the assistance to be received from other sources. Through persistent efforts and in a spirit of compromise, we have succeeded in evolving standards having reasonably general acceptance in India. Some of our overseas friends have shown a willingness to compromise and agree on a common national standard for India, although for historical reasons they may find it more difficult to deviate from the established practices in their own countries. This problem is likely to be met in other countries in Asia or Africa.

In India, a large number of electrical manufacturing industries are being set up rapidly in collaboration with a number of firms from countries in North America, Europe, and Japan. Efforts are being made to keep a careful watch on the standards they follow and on the extent to which they will work around Indian standards or IEC recommendations. For this reason, a fairly large number of Indian standards have been published in the last few years.

An essential requirement in standards for India, as well as for a number of countries in South East Asia and on the African continent, is to meet the effects of the severe climatic conditions of the tropics. This warrants certain departures from the IEC recommendations in adapting them for the developing countries. The factors to be considered are high temperature, high humidity, fungi, vermin, rodents, sunlight, salt, and dust.

India has been advocating making adequate provision in IEC recommendations for the variations that exist in tropical and subtropical climates on the one hand and temperate climates on the other. As a first step, a standard reference temperature of 27 C for tropical climates has been adopted by IEC. We are also happy to see the increased attention the several technical committees are giving to this aspect.

I appeal to the developed countries to adopt a sympathetic and understanding approach towards the problems of the developing countries and to help in formulating standards which can be universally accepted.

I would also like humbly to suggest to the engineers in the electrical field in the developing countries to have a dispassionate approach in the process of setting up their own national standards.

Even within the IEC it is often noticeable that the main lines of disagreement arise between the manufacturers of equipment on the one hand and the users on the other. The same problem exists in every na-

tional committee. The acute shortage of capital goods and the difficulties of foreign exchange resources for imports will encourage a tendency "to make cheap and buy cheap." If allowed to go unchecked, both these tendencies would be disastrous for the establishment of a healthy electrical manufacturing industry or for the establishment of a proper electricity supply industry in the country concerned.

For electric equipment, quality is the most vital ingredient next only to safety, and any lowering of the standards would necessarily result in a sacrifice of efficiency and the life of the equipment, apart from endangering the lives of users of electricity. It is, therefore, necessary that the developing countries should not only aim at adopting or formulating reasonably good and effective standards for quality, but also support their standards organizations with adequate testing and research facilities. In India, a special enabling legislation exists for the issue of an ISI Certification Mark as a stamp of quality.

The history of electrical development in the world has shown that there is no place in this field for cheap goods. Manufacturers who at one time or other made goods of inferior quality soon came to grief and practically vanished from the field and only those who maintained a high standard of quality have survived. This possibly is the reason why certain manufacturers of international repute have been holding worldwide markets. This lesson should be of special value to the developing countries and should be learnt and practiced almost with a religious fervor.

The pattern of international trade in many countries has become diversified so that countries in Asia and Africa are starting to obtain equipment from many countries on the basis of competitive global bids, rather than from restricted trade areas as was the case in the past. This will result in different items of equipment being obtained from two or more sources, even for the same power station or for a substation.

This happened in the case of a large hydro-electric project in India where the turbines came from Japan and the generators from the United Kingdom. Such diverse combinations have become economic necessities and have been largely made possible by suitable international standards. This pattern of development is bound to increase in the future, and is desirable for reasons other than economy in price. For example, it will bring engineers from different nations together in practical work. Such collaboration will create in them a sense of understanding and appreciation of their respective techniques. It will also have a profound influence on their attitudes towards international standardization, resulting in increasing agreement in evolving IEC recommendations.

The developing countries should also realize that, for advantageous procurement of equipment through international bids, they should be careful to frame their specifications in such a way as to provide for a large measure of acceptability from various countries, and as far as possible in line with IEC recommendations.

In this connection, certain large power utilities in some countries frame their own distinctive specifications, obviously to meet their own special requirements. Sometimes these special requirements may be based on time-honored practice within the utility, rather than on real technical or economic justification. However reasonable this may seem to be from the point of view of the utilities themselves, their specifications may not conform in many respects even to their own national standards and much less to international recommendations. This approach goes against the philosophy of standardization and all the good it stands for. The engineers in developing countries should avoid such pitfalls in making their specifications and should follow international and national standards almost entirely.

The world is constantly changing, and progress in science and technology is responsible for it. Very soon, the attention of IEC will have to be turned in a larger measure to new types of equipment connected with nuclear energy, automation, computers, and such other recent developments. It is only proper that we move fast with maximum international agreement on standards for older types of equipment so that we may be ready to face the new order.

It has often been emphasized that the achievements of IEC will largely depend upon the extent to which national interest can be subordinated to the broad-based spirit of cooperation and compromise. Let me commend this spirit and hope that our efforts in IEC will be rewarded and that through it the world community may become more prosperous.

Country	Monthly Average of Electricity Production in Million Kwh			Average Percentage Increase Per Annum		Per Capita Production of Energy During 1959
	1951	1954	1959	For the Period 1951-54	For the Period 1954-59	
Ceylon	8	12	22	16	16	27
China (Taiwan)	107	150	268	13	16	315
Fed. of Malaya	52	73	77	13	1	138
Hongkong	35	41	79	6	18	332
India	488	627	1 215	10	18	36
Indonesia	51	67	120	10	16	16
Japan	3 453	5 006	8 260	15	13	1 065
Korea (Rep. of)	26	75	141	63	17	71
Pakistan	25	42	100	23	28	14
Philippines	50	80	125	20	12	61
Thailand	9	19	27	37	8	15
Other Selected Countries						
U.S.S.R.	—	12 558	22 083	—	15	1 260
U.S.A.	—	45 387	66 210	—	9	4 460
U.K.	—	5 075	8 764	—	8	2 030
France	—	3 798	5 376	—	8	1 432
Germany (Fed. Rep.)	—	5 710	8 488	—	10	1 950
Canada	—	6 150	8 654	—	8	5 950

ASTM's Sixty-fourth Annual Meeting

Society elects officers; committees act on standards

THE EFFECTS OF NATURALLY OCCURRING space radiation on materials; radiation effects in refractory fuel components; irradiation test methods; and nuclear standardization activities were highlighted during the 64th Annual Meeting of the American Society for Testing Materials, held at Atlantic City, N. J., June 25-30, 1961. The five-day meeting included 41 technical sessions on some 30 subjects. More than 50 of the Society's technical committees and their subcommittees held some 1000 committee meetings concurrently with the technical programs.

Miles N. Clair, president, The Thompson & Lichtner Co, Inc, Brookline, Mass., was elected ASTM president and Alfred C. Webber, assistant to the laboratory director, Research and Development Division of the Polychemicals Department, E. I. du Pont de Nemours & Co, Inc, Wilmington, Delaware, was elected vice-president. R. Wade Seniff, manager of research, The Baltimore and Ohio Railroad Co, Baltimore, Md, will continue as senior vice-president.

Among new members of the Board of Directors are Gordon M. Kline and Wayne A. Kirklin. Dr Kline is chief of the Organic and Fibrous Materials Division of the National Bureau of Standards, and is well known in the American Standards Association because of his activity in the international work on plastics. Mr Kirklin is a member of the Materials and Testing Standards Board of ASA, as well as a member of the Society's Administrative Committee on Standards.

Eleven organizations that had been members of ASTM for 60 years, and three individuals and 14 organizations that had been members for 50 years, were honored at the Awards Luncheon. Fifteen individuals and 36 organizations were honored as 40-year members. Rear Admiral M. J. Lawrence, assistant chief of the Bureau of Ships for Technical Logistics, spoke on behalf of the long-term members. The Navy has been a member of ASTM for 50 years.

In the 50 years during which the Navy has been a member of ASTM, "we can all justifiably claim to have participated in the greatest explosion of materials technology since time began," Admiral Lawrence said.

"In this age of nuclear submarines, missiles, rockets, and orbital vehicles, it may well be that materials will surpass man in importance and usefulness in making war," he declared. "What we do in a scientific and military way in the future will depend entirely on our ability to develop and perfect new materials, and it is quite certain that most of these new materials will bear little resemblance to what we have used in the past and are using now."

"New developments in materials, whatever they may be, will force new developments in test and evaluation methods to determine their qualifications, safety, durability, performance, and acceptance characteristics. New standards to measure and assess these characteristics must be produced," Admiral Lawrence pointed out. "Today we badly need nondestructive test methods to determine the soundness of silver-brazed joints and many other items of hardware. Tremendous effort and much tedious work is ahead of U. S. industry and the Armed Forces to discover, to improve, and to determine the effective reproducibility, repeatability, and the true significance of test and evaluation methods and procedures and how they will relate characteristics of qualities found in basic tests to the true application and performance of materials under consideration. In ASTM you have the knowledge, the experience, the capacity, and the coordinated organization of talents to help meet the challenge and to produce the results."

The Max Hecht award was presented by ASTM Committee D-19, Industrial Water, to Claude K. Rice for his service to water technology, and particularly as standards advisor to the committee. He was particularly recognized for his work in developing uniform systems for writing specifications and test methods.

Arthur G. Scroggie, retired research manager, Textile Research Laboratory, E. I. du Pont de Nemours & Company, Inc, Wilmington, Delaware, was one of 17 leaders in the field of engineering materials who received the Society's Award of Merit. Dr Scroggie was chairman of the subcommittee of ASTM Committee D-13 that handled international standard tests

for textiles referred to ASTM by Sectional Committee L23 — the U. S. Committee for ISO/TC 38 on Textiles.

We must have a faster exchange of information between materials scientists and U. S. industrial and government agencies, because of the mounting flood of technical information now available, if we are to maintain our scientific leadership over Soviet Russia, declared retiring ASTM president Dr A. Allan Bates. Dr Bates, vice-president, Portland Cement Association, discussed "An American Society for Testing Materials in the Future."

The annual Edgar Marburg Lecture, established by the Society to honor its first secretary, was presented by Dr Bruce Chalmers, Gordon McKay Professor of Metallurgy, Harvard University, and editor of *Acta Metallurgica*. His subject was "The Nucleation and Growth of Ice Crystals."

Dr Augustus B. Kinzel, vice-president, research Union Carbide Corporation, presented the Gillett Memorial Lecture, sponsored jointly by ASTM and Battelle Memorial Institute to honor Horace W. Gillett, first director of Battelle. Speaking on "Specifications?!" Dr Kinzel explored the structure and content of specifications in relation to their objectives; the need for flexibility and judgment as a substitute for ignorance; and the relation of tests and testing to specifications.

A PANEL DISCUSSION, sponsored by the special ASTM Administrative Committee on Nuclear Problems, pointed out the general scope of nuclear standardization activities in the American Society for Testing Materials, American Nuclear Society, American Society of Mechanical Engineers, American Standards Association, and the Pressure Vessel Research Council.

Some of the important actions on standards taken by the committee during the Society's annual meeting are reported on the following pages.

Steel, A-1: A new specification covering high-strength bolts for other than structural purposes and an important revision of Specification A 325 were approved. A revision of Specification A 94 for structural silicon steel is under way to cover material of 50,000 pounds per square inch minimum yield to 1 1/8 in. in thickness.

A proposed revision of the marking requirements for deformed bars for concrete reinforcement furnished to ASTM Specifications A 16, A 160, A 408, A 431, and A 432 will require size and grade identification. It is planned to revise Specification A 16 and to prepare a separate document for rail steel reinforcement with a minimum yield strength of 60,000 psi.

Other new specifications proposed for development include:

Forgings for gears for industrial or general use, to be coordinated with specifications developed by the American Gear Association.

Castings for highway bridges.

Weldable low-alloy steel castings for gas transmission lines.

Condenser and heat-exchanger tubes with integral fins, made of carbon, alloy, and austenitic steels.

High-strength large-size bolting for the nuclear industry.

Participation in ISO Technical Committee 17, Steel, was reviewed after a year's activity. Four USA delegates attended the week-long April, 1961, meeting of TC 17 in London. Twelve test methods (including hardness, impact, tension, ring expanding, creep, fatigue, and carbon and silicon analysis) were approved for letter ballot. Recommendations for general technical delivery requirements for steel and for selection and preparation of test specimens were also approved for letter ballot. Activities under way in working groups include two specifications for structural steel, two specifications for quenched-and-tempered steels, additional analytical methods, and methods for the Jominy hardenability test and for grain-size measurement. A new working group has been established to draft an ISO recommendation for design of structural steel sections.

Committee A-1 also recommended USA participation in an International Deep Drawing Research Group. Several representatives of companies in the USA attended a symposium sponsored by the international group last year.

Cement, C-1: Several changes in the Specification for Portland Cement (C 150), and for Masonry Cement (C 91) were acted upon, which will bring corresponding Federal and ASTM specifications more nearly in line with each other.

A new tentative specification for apparatus to be used in the measurement of the volume change of cement paste, mortar, and concrete was reported. The specifications for natural cement (C 10) were extensively revised. A number of tentative methods of chemical analysis of portland cement, having undergone extensive trials, were adopted as standard as either optional methods or as replacements for the previous standard methods. The limits on the autoclave expansion of portland cement were increased from 0.50 to 0.80 percent, and the procedures for calculating the assumed compounds in portland cements were substantially expanded.

Some helpful new information about false set in portland cement was made available through the publication of definitions for some of the more commonly used terms. Data obtained from a recent comparative test program in which more than ten laboratories participated are being reviewed for use in the methods for determining false set. Also, specification requirements for false set based on these tests are being formulated.

Increased attention is being given to international methods of test and specifications for cements following the designation of Committee C-1 as the USA advisory group to the American Standards Association in the work of ISO/TC 74 on Hydraulic Binders.

Concrete and Concrete Aggregates, C-9: Some new projects under way include: Collection of data from various sources to establish the experience with vibrated test specimens; round-robin tests on liquid membrane-forming compounds; a test program to refine the test methods dealing with hardened concrete; completion of a test program for obtaining data on abrasion-testing apparatus on concrete floors; and collection of information on the

evaluation of aggregates by freezing and thawing in concrete.

The Subcommittee on Admixtures reported a full program of research leading to the development of specifications for chemical-type admixtures. Proposed specifications should be available during the coming year.

A proposed method of test for compressive strength of insulating concretes was agreed upon. Revisions in existing specifications for lightweight aggregates (C 330, C 331 and C 332), were accepted in the subcommittee for later action by Committee C-9.

Asbestos-Cement Products, C-17: Reports from the subcommittees responsible for standards for roofing and siding indicate that all present standards are being reviewed for further refinement. Freezing-and-thawing tests, color stability, and water penetration tests are being studied. The development of a standard for a sandwich-type asbestos-cement board was reviewed in the subcommittee dealing with flat and corrugated sheets.

Electrical Insulating Liquids and Gases, D-27: Expensive and irritating outages of electrical power transmission can occur from relatively simple failures of transformers, cables, and switching equipment. One likely cause for such failures is the tendency for gas to evolve from apparatus in service, which can be explosive, given the right conditions. If the tendency of certain apparatus to evolve explosive gases could be anticipated through some measurement of materials properties, steps could be taken to prevent the occurrence. This problem has been tackled by the Subcommittee on Gases of Committee D-27, which has established a program to develop methods for evaluating gas evolution from apparatus in service.

Subcommittee N on Electrical Tests has completed a method for the dielectric strength of insulating liquids, using the so-called VDE electrodes developed in Germany, an improvement over the method previously available. The subcommittee is developing methods for determining dielectric strength properties of gases and small samples of synthetic liquid products, and also a method for electric stability of cable oils and for oxidation tendency of insulating oils using a continuous measurement of power factor. The Subcommittee on Chemical Tests is endeavoring to clarify the sulfur corrosion determination as outlined in Method D 1275, and has completed a method for thermal stability of chlorinated organic liquids known as askarels.

Metallography, E-4: Subcommittee IX has found that the Recommended Practice for Determining the Inclusion Content of Steel (E 45-51) needs revision in order to reflect up-to-date practice. This has resulted in the inclusion of the SAE rating chart for oxides and silicates, in addition to the previous Jernkontoret chart in the 1960 revision (E 45-60T). A further extension is planned to cover the rating of inclusions in vacuum-melted and special quality steels.

As a result of the general acceptance of the Tentative Methods of Estimating the Average Grain Size of Metals (E 112), these methods have been adopted as standard. Withdrawal of the earlier grain size methods, E 19, E 79, E 89, and E 91, is under way.

The Recommended Practice for Identification of Crystalline Materials by the Hanawalt X-ray Diffraction Method (E 43) has been recognized as obsolete for some years. The Joint Committee on Chemical Analysis by Powder Diffraction Methods has been working on a document to supersede it. Committee E-4 is considering withdrawing Method E 43.

Committee E-4 has given final approval to a Tentative Recommended Practice for Resistometric (or EMF) Analysis of Metallic Materials and will soon propose to the Society that this new document be approved for ASTM publication.

Quality Control of Materials, E-11, Subcommittee 1: Grant Wernimont, Eastman Kodak Company, reported on the Proposed Recommended Practice for Conducting an Interlaboratory Study of a Test Method, which has been in preparation for some time. Several years ago, John Mandell, National Bureau of Standards, developed a theoretical model for the statistics involved, considering testing as a process. This model is the basis for the Recommended Practice for Interlaboratory Testing of Paper and Paper Products (D 1749). Dr Wernimont has added to the statistics of Dr Mandell and has developed a draft recommended practice which starts with a few materials and laboratories, developing step by step through the statistical reasoning needed to handle N materials and N laboratories. It is expected that this general recommended practice will be published by the Society as a manual, similar to the present Manual on Quality Control of Materials.[1]

R. B. Murphy of Bell Telephone Laboratories explained the reasoning behind the proposed tentative recommended practice for use of the terms "precision" and "accuracy" as applied to measurement of a property of a material. He explained that the term "accuracy" is considered to include the concepts of precision or small random error as well as freedom from bias. The term "precision" has to do with the closeness of individual measurements to each other; the more closely bunched they are, the higher the precision.

This concept of accuracy, while widely held, differs from that normally used by the chemist. The chemist is accustomed to considering "bias" and "accuracy" as synonymous terms. However, the chemists in ASTM, as represented on Committee E-15 on Analysis and Testing of Industrial Chemicals, have adopted the concept of accuracy as expressed in the proposed practice. They express the meaning of accuracy as follows: "Although the term 'accuracy' is frequently used in chemical work to express the agreement between an experimentally determined mean value and the true or accepted value, in ASTM usage this term assumes a broader meaning, combining the concepts of both precision and bias."

Dr Murphy warned of pitfalls in using the terms "repeatability" and "reproducibility," in the manner so prevalent in many ASTM committees. He pointed out that it is not always clear from the context which causes have been included in these terms. Usually, but not always, "repeatability" appears to mean single-laboratory, multi-operator-machine-day precision, and "reproducibility" appears to mean multilaboratory-operator-machine-day precision. The system of causes referred to by each

[1] Part 3 of this manual has been published as an appendix to American Standard Z1.2-1958, Control Chart Method of Analyzing Data.

of these terms should always be stated when the terms are used.

Skid Resistance, E-17: Subcommittee II-e on Tire Characteristics and Significance has been set up to make studies for the benefit of the public, as well as for engineering interest. "To develop and standardize tires for use in measuring skid resistance of traffic surfaces; to encourage and sponsor research pertaining to the characteristics of such tires which significantly influence their sliding characteristics" is the scope of the subcommittee.

A pavement-test standard tire has been manufactured for use in research on skid resistance. The tire was developed by the Technical Advisory Committee of the Tire and Rim Association, Inc. The Subcommittee on Winter Driving Hazards of the National Safety Council will incorporate the test tire in its basic research on tire performance on ice and snow this coming winter.

A field correlation study, involving various machines which measure surface friction, will be initiated as the result of a joint meeting of Committee E-17 members, the Highway Research Board Committee on Road Surface Properties, and other agencies. It is anticipated that the Virginia Council of Highway Investigation and Research will plan and conduct the study.

A task force was formed composed of all members who have the British Portable Tester, with the objective of correlating this type of apparatus.

FOLLOWING ARE SOME IMPORTANT actions reported by committees which did not meet during the ASTM annual meeting.

Electrodeposited Metallic Coatings and Related Finishes, B-8: Final reports for two programs are being published. One covers a four-year atmospheric exposure of copper-nickel-chromium coatings on steel to determine the value of nickel strike versus copper strike platings under chromium, the use of heavy crack-free chromium plating, the beneficial effects of buffing at various stages, and to compare the use of bright nickel versus Watts nickel undercoatings. The second report summarizes the results of an investigation of chromate conversion films for electroplated zinc coatings on steel.

A new Tentative Specification for Electrodeposited Coatings of Multi-Layer Nickel Plus Chromium on Steel (B 375-61T) has been rushed to completion to standardize the duplex nickel coatings for outdoor service that have recently swept the field.

A series of 207 definitions of terms used in the electroplating industry, describing types of finishes, reagents, apparatus, and effects of corrosion, have been completed and published as Tentative Definitions B 374.

Revision of the dye test to determine the sealing of anodic coatings (B 136), dielectric strength (B 110), and weight of coating tests (B 137) is in process. Plans are under way to solicit panels for different treatments and anodizing of aluminum for accelerated and environmental tests.

Two methods for designating plated coatings that will permit labeling of the coatings to ensure consumer quality depending on service requirements are being actively studied.

Refractories, C-8: A new study on corrosion of glass tank refractories has been initiated to develop methods for evaluating the resistance of various refractories to deterioration by alkalies in the glass furnace.

A classification of carbon refractories produced in America is being prepared. Tests for thermal conductivity, gaseous permeability, and alkali attack on carbon refractories are being cooperatively studied.

New classifications for mullite refractories (C 467) and refractory granular dolomite (C 468) have just been issued. The classification of Fireclay and High-Alumina Refractory Brick (C 27) has been revised to include brick having an alumina content up to 95 percent.

Classifications for silicon carbide, zircon, magnesia, and plastic refractories are being developed.

A project has been initiated to develop more information on the long-time load test to determine if reliable long-term data can be predicted from the short-time load test.

Samples of mullite, semi-silica, and 60-percent alumina brick are being circulated to cooperative laboratories to determine if any correlation between the two tests exists.

Many methods are under development, including: determination of titanium and sulfur in dolomitic refractories, boron in basic refractories, and sodium silicate in mortars and castable refractories; hydration resistance of dolomite, periclase, and magnesia products; the determination of bulk density, true specific gravity, and porosity of hydratable materials; equipment to determine hot modulus of rupture of arch, wedge, and circle brick; and physical and chemical properties of basic granular refractories.

Glass and Glass Products, C-14: A revision of the Standard Methods of Testing Cellular Glass Insulating Block (C 240) has been prepared. Forty new and revised definitions were added to Definitions C 162 covering types of glass, glass parts, and processes. This was partially as a result of reviewing definitions of the British Standards Institution's draft glossary. The committee recommended changes and revisions to the BSI definitions.

The committee is considering a request from the ASA Chemical Industry Advisory Board to develop specifications for chemical-process glass pipe.

Ceramic Whitewares and Related Products, C-21: The Task Group on Nuclear Grade Graphite has determined that ASTM test methods used in this industry include: B 193, C 78, C 134, C 198, C 372, C 407, C 408, and E 111. Test methods for measurement of gaseous permeability, open and closed porosity, outgassing spectrum, and grain size need to be standardized. The task group has decided that purity specifications for nuclear graphite can be established and tentative proposals can now be prepared. The various properties of fueled graphite are being explored for possible standardization.

The committee has formed a new group to develop specifications for chemical-process pipe as requested by the ASA Chemical Industry Advisory Board.

Preliminary work has been completed on a standard test for determining the extractible lead from ceramic glazes in cooperation with the Kettering Laboratory of Applied Physiology, the Baltimore City Health Department testing laboratories, and the California Department of Public Health.

A test method for specular gloss of ceramic tile was approved for subcommittee letter ballot. The Ceramic Tile Subcommittee proposed that work be started to investigate the possibility of developing test methods for measuring color differences of glazed ceramic tile.

At the meeting of the Task Group on nonplastics, six laboratories reported on a blend of silica with a particle size ranging between 50 percent above and 50 percent below 10μ. These data will provide a basis for a recommended practice for the use of micro-mesh sieves in the 45- to 15-μ range for a single-phase system (work on a multiphase system will be undertaken in the future). A new interlaboratory study was initiated using a finer blend of nonplastic whose upper limit will be 5μ.

A new task group on graphite pipe has been formed. Its work will be primarily directed toward the development of specifications for graphite pipe for use in the chemical process industry.

The Nuclear Applications Subcommittee believes that it is feasible to standardize methods and classifications of density measurements, and to establish quality control standards. Definitions of theoretical density and defects in fabricated ware are needed. The first work will be to determine whether certain existing tests can be unified and others standardized.

Porcelain Enamel, C22: A standard method to determine the resistance of porcelain enamel on aluminum to spall has been completed for presentation as tentative.

A method to determine the stress and strain exerted by porcelain enamel on metal substrates is under development. This method may also be used to develop data relating to the differential thermal expansion behavior of dissimilar metals bonded together by ceramic adhesives.

Interlaboratory work is continuing on the method of determining the coefficient of expansion of porcelain enamel. Also being investigated are methods for impact, continuity of coating by high- and low-voltage breakdown tests, and the sag characteristics of steel during firing of porcelain enamel coating.

The committee, in conjunction with Committee A-1 on Steel, is developing an improved version of the Specification for Porcelain Enameling Steel (A 424).

Packaging, D-10: In 1950, the scope of Committee D-10 was changed to include packaging, even though the title had remained "Shipping Containers" since 1914. The new title has encouraged consideration of new projects. Discussion is centering around testing consumer-size packages for their ability to survive after leaving the shipping container, exterior packaging (tape, strapping, and bundling materials), railroad dunnage, and pressure containers.

For the past 17 years the committee has been developing methods of testing interior cushioning materials for packaging. Static tests (D 1372) and dynamic methods (D 1596) have been published. A method to determine the creep properties of materials exhibiting a high degree of compressibility and recovery in bulk, sheet, or molded form will soon be ready for publication. Compatibility and vibration tests of interior packing material with metal surfaces are other facets of work under way for packaging materials.

Considerable interlaboratory work is being done to determine the variability of existing apparatus for the incline impact test (D 880) and the revolving hexagonal drum test (D 782).

Committee D-10 is utilizing extensive research by the U. S. Forest Products Laboratory to prepare a recommended practice for determining the safe dead load storage life of corrugated and solid fiberboard boxes. The recommended practice will take into account the many variables of storage and relationship of load to time to failure.

Adhesives, D-14: The former Subcommittee V on Specifications has been renamed "Special Adhesives" due to the broad scope of its activities in the development of packaging adhesives, shoe adhesives, optical adhesives, and general-purpose adhesives.

The subcommittee on wood adhesives is developing new methods for testing lumber adhesives, veneer adhesives, pulp and particle board binders, and adhesives for bonding wood to other materials. A study of dimensional orientation of wood grain angles for the cross-lap shear test was presented. This study will be used as a basis for revisions of the sample preparation in Method D 905.

Several metal adhesives methods are being completed in subcommittees. They are: strength properties of adhesives in shear by compression loading; strength properties of adhesives in shear by tension loading in the temperature range 600 to 1,500 F; creep properties of adhesives in tensile shear in the temperature range of −67 to 500 F; and preparation of metal surfaces for adhesive bonding.

A recommended practice for the preparation of surfaces of plastics for adhesive bonding is being developed. Existing Committee D-14 methods that could be made applicable to plastics adhesives testing are being reviewed. In addition, a new method of determining the tensile strength of adhesives by the use of rod and bar specimens is being developed. This method will be available as an alternate to Method D 897, which is an old-style approach to the determination of tensile properties. A recommended practice for the preparation of specimens for the bar and rod tests is also being developed.

Wax Polishes and Related Materials, D-21: Minor revisions of the Proposed Method of Test for Static Coefficient of Friction of Waxed Surfaces are being completed. Culminating six years of study, this method is being published so as to standardize tests for the slipperiness of waxed floors.

A broad series of test methods being developed in this field include methods for emulsion polymers used in wax polishes, resin content of natural waxes, determination of total solids and silicon content of solvent based polishes, freeze-thaw stability of emulsion wax polishes, and methods for determining discoloration and recoatability of emulsion polishes. The committee is also developing recommended practices for the application, maintenance, and removal of wax polishes of various types of flooring. Work is under way toward the establishment of a standard method for determining the melting point of waxes and wax polishes.

Recommended practices have been completed for the application of wax polishes to asphalt tile and vinyl-asbestos tile.

Cellulose and Cellulose Derivatives, D-23: The use of chromatographic techniques for the separation, identification, and quantitative analysis of the carbohydrate components of cellulosic materials is well established. There are, however, nearly as many variations in the individual steps of the basic technique as there are laboratories conducting such analyses. In recognition of the difficulties of such a situation, the American Society for Testing Materials, the American Chemical Society, and the Technical Association of Pulp and Paper Industries formed a Joint ASTM-ACS-TAPPI Section on Chromatographic Methods under ASTM D-23, Subcommittee II. They charged the new section with the task of selecting and recommending one procedure as a tentative standard method of chromatographic analysis.

Work to prove this method was undertaken by 16 laboratories in this country and abroad. Five pulp samples from the stocks maintained by the International Committee on Cellulose Analysis and the resulting data were circulated to select one specific set of techniques for recommendation as the tentative standard method.

A new method to cover the determination of the carboxyl content or ion exchange capacity of cellulose has been presented to ASTM for publication as tentative. A method to determine the carboxyl content is in process.

Actions pending on other methods include: a new chromatographic (colorimetric) method to determine sodium glycolate in both crude and refined sodium carboxymethyl cellulose, and methods to determine degree of substitution and degree of etherification (in a non-aqueous medium) of sodium CMC; methods of test for salt content, ash, iron, and lead content, moisture, and viscosity of alkyl and hydroxyalkyl cellulose; and revisions of Methods of Testing Cellulose Acetate Propionate and Cellulose Acetate Butyrate (D 817) to include tests for heat stability, hydroxyl content, primary hydroxyl, sulfur or sulfate content, intrinsic viscosity, color, and haze.

Through the cooperative activities of the International Committee on Cellulose Analysis, the committee is considering representation on the U. S. Advisory Group for ISO/TC 6 on Paper. This latter group, at the request of TAPPI, is requesting participation status on ISO/TC 6 Subcommittee 5 on Raw Materials Used in Paper Manufacture.

How one Company's Standards Committee Educates Divisional and Works Managers on the Company's ASA Membership (Names Omitted)

To: Machinery Division and Works Managers

From: Secretary, Standards Committee

Subject: Corporate Affiliation with the American Standards Association

Gentlemen:

We wish to familiarize you with our ... membership in the American Standards Association, the cost of which is borne by the corporation standards program.

Under the terms of our membership, we have been provided with a complete file of the American Standards and we are entitled to a quota of all new standards as they become available. This file is maintained in the Standards Section of Central Engineering and the standards are available on a short-term loan basis to all interested ... personnel.

Among many advantages offered by the American Standards Association to representatives of member companies are the Standards Reference Library of between 65,000 and 70,000 standards, specifications, and related material, as well as the ASA Reference Bureau dealing with matters of domestic and foreign standards. Requests for services or information in this regard should be addressed to: Mr Kenneth G. Ellsworth, Director of Public Relations, American Standards Association, 10 East 40th Street, New York 16, N.Y.

Recent arrangements have been made with Mr Ellsworth for all chief engineers and works engineers in the ... Machinery Group to be furnished periodically with copies of the Catalog of American Standards as well as copies of the ASA New Publications Sales Service. By this means you will be kept informed as to the availability of ASA publications. Any literature desired to be retained on a permanent basis should be requisitioned directly from the ASA in New York.

Should there be any further information or service you may desire in this regard, please do not hesitate to contact us.

Very truly yours,

Secretary, Standards Committee

NEW INTERNATIONAL RECOMMENDATIONS

ISO Recommendations are published by the International Organization for Standardization, and IEC Publications by the International Electrotechnical Commission, Geneva, Switzerland. Copies are available from ASA.

DRIFT EXPANDING TEST ON STEEL TUBES. ISO R 166. November 1960. First edition. $0.60.
Applies to the drift expanding test on steel tubes of circular cross section, having an external diameter not greater than 150 mm (5.9 in.) and a thickness not greater than 9 mm (0.35 in.).

STRETCHERS, STRETCHER CARRIERS AND HOSPITAL TROLLEYS. DIMENSIONS. ISO R 168. December 1960. First edition. $1.20.
Specifies the essential dimensions of stretchers and stretcher carriers to ensure interchangeability in transport and thus to facilitate the passage of sick or injured persons from one country to another by different means of transport, eliminating the need to transfer patients from one stretcher to another.

SIZES OF PHOTOCOPIES (ON PAPER) READABLE WITHOUT OPTICAL DEVICES. ISO R 169. December 1960. First edition. $0.60.
Three sizes (one of them indicated as preferred) are given, in millimeters. All three sizes are in accordance with the International A series of paper sizes.

SHIPBUILDING DETAILS. ANCHOR CHAINS, STUD LINKS (COMMON LINKS, ENLARGED LINKS, END LINKS AND JOINING CHACKLES). ISO R 170. December 1960. First edition. $3.00.
Includes recommendations for shape and dimensions, tolerances, and material.

CROSS - INDEXING

Industry and Military Specifications and Standards

Reported by W. L. HEALY

Do you know of any case where an adequate, and comparable, industry standard or specification can be used for a military document? If so, you are invited to call it to the attention of W. L. Healy, staff engineer, American Standards Association. Mr Healy is cross-indexing and analyzing comparable industry and military specifications for the Bureau of Ships under a contract with ASA.

It is the thought that the materials represented by the industry standard are the standard, and more readily procured, materials. It is hoped that these industry standards and specifications which have been listed along with their comparable military documents in THE MAGAZINE OF STANDARDS may be used for procurement. However, the use for procurement of any of the published industry standards or specifications, especially in the area of critical application, is a matter for decision by the cognizant engineering office.

Following are recent examples of work performed under the contract. For other examples, see earlier 1961 issues of THE MAGAZINE OF STANDARDS.

MIL-P-8059A
cross index ASTM D 709-55T (NEMA Pub. No. LP-1-1959)

MIL-P-8059A—PLASTIC MATERIAL, LAMINATED, THERMOSETTING; SHEETS AND TUBES, ASBESTOS BASE, PHENOLIC RESIN

Equivalent Areas: ASTM D 709-55T (NEMA Pub. No. LP-1-1959), type III, grades A and AA, covering asbestos base laminated material, is equivalent to MIL-P-8059A, types PBA and FBA, respectively. Grade A is asbestos paper base and is furnished in sheets and in tubes rolled and molded.

Grade AA is asbestos fabric base furnished in sheets and in tubes rolled and molded.

The physical requirements, including water absorption, impact strength (IZOD), and bonding strength, are identical. Dimensions and tolerances are the same.

Divergent Areas: The flexural strengths for type A, tested flatwise, are identical. The values listed in ASTM D 709-55T, however, are somewhat higher for grade AA than those listed in MIL-P-8059A for type FBA. They are as follows:

THICKNESS RANGE		AA (psi)	FBA (psi)
Cut lengthwise	1/16 — 1/8	16000	16000
over	1/8 — 1/2	18000	16000
over	1/2 — 1	15000	13500
Cut crosswise	1/16 — 1/8	14000	14000
over	1/8 — 1/2	16000	14000
over	1/2 — 1	13000	11700

Under the ASTM D 709-55T specification, sheets and tubes, grade A, are furnished in natural or gray-black colors. Grade AA is furnished in natural color only. Under MIL-P-8059A, the color is natural, varying from light tan to a light brown or reddish brown.

Exclusions: MIL-P-8059A lists only the material included in ASTM D 709-55T under type III, grades A and AA, and in NEMA specification Pub. No. LP-1-1959, grades A and AA.

Other Requirements: The procurement document should specify the ordering data and include sampling and inspection requirements as indicated in MIL-P-8059A.

Statistical sampling and inspection will be in accordance with MIL STD 105.

Packaging for delivery is in accordance with MIL-P-116. In addition to any special markings required by contract, unit packages, intermediate packages, and exterior shipping containers shall be marked in accordance with MIL STD 129.

The following ASTM Test Methods are used in determining values:

Sheets	
Flexural strengths	ASTM D 790-55T
Impact strength (IZOD) method A	D 256-56
Bonding strength	D 229-58
Water absorption	D 229-58
Tubes	
Density	D 348-56
Water absorption	D 348-56
Compressive strength	D 348-56
Warp and twist	D 668-52

MIL-M-3412A
cross index ASTM D 787-55

MIL-M-3412A—MOLDING PLASTIC, ETHYL CELLULOSE

Equivalent Areas: ASTM D 787-54, type I, grades 1, 2, 3, and 4, general purpose, and type II, grades 5 and 6, high impact, covering thermoplastic molding compounds consisting of ethyl cellulose plasticisers with or without the addition of stabilizers, dyes, and pigments and suitable for injection and extrusion molding, are equivalent to MIL-M-3412A, types I, grades A, B, C, and D, and type II, grades F and G respectively. The requirements of both specifications are identical for specific gravity, hardness (Rockwell) min-R-scale, water absorption, and heat distortion temperature.

Divergent Areas: The tensile strength (min psi) for both specifications are identical except as follows:

TENSILE STRENGTH MIN, PSI					
MIL-M-3412A			ASTM D 787-55		
Type I			Type I		
Grade A	Grade B	Grade D	Grade 1	Grade 2	Grade 4
6700	6000	3000	6000	4800	3500

The impact strength factors are all equivalent except as follows:

IMPACT STRENGTH IZOD MIN, FT-LB				
	MIL-M-3412A		ASTM D 785-55	
TEMP	TYPE I Grade D	TYPE II Grade G	TYPE I Grade 4	TYPE II Grade 6
23 C	3.0	3.0	2.8	4.0
−40 C			0.5	0.8
−55 C	0.5	0.8		

Weight loss on heating is the same for all grades in type I. The two grades in type II differ slightly: MIL-M-3412A lists values of 0.8 max in grade F and 1.4% max in grade G, while the ASTM D 787-55 lists 1.0% max for grade 5 and 2.0% max for grade 6.

Exclusions: MIL-M-3412A, type II, grade E, and type III, grade H, and type IV grades J and K, are not covered by ASTM D 787-55.

Other Requirements: The procurement should specify the ordering data and include sampling and inspection as required in MIL-M-3412A. The properties enumerated in the specification can be determined in accordance with the following test methods:

ASTM Test Methods:

(a) Conditioning Test Specimens Procedure A	ASTM D 618-58
(b) Specific Gravity Method A	D 792-60T
(c) Impact Strength (IZOD) Method A	D 256-56
Impact Res. Subnormal Temperature	D 758-48
(d) Deflection Temperature	D 648-56
(e) Water Absorption	D 570-59T
(f) Test for Rockwell Hardness, Method A	D 785-60T

Unless otherwise marked, packaging and packing for overseas shipment in accordance to Jan-P-112.

Sampling procedures and tables for inspection by attributes MIL STD 105.

Marking for shipment and storage MIL STD 129.

MIL-T-1368B
cross index ASTM B 165-58T

MIL-T-1368B—TUBING, NICKEL-COPPER ALLOY, SEAMLESS AND WELDED

Equivalent Areas: ASTM B 165-58T is equivalent to MIL-T-1368B, type 1, condition 1 annealed and condition 2 stress-relieved. The chemical and physical requirements are comparable.

Permissible variations in O.D. (including ovality) and permissible variations in wall thickness are comparable.

Both specifications provide that when material is intended for nuclear application, any special requirements beyond the standard be negotiated at time of purchase.

Divergent Areas: Both specifications require hydrostatic tests unless otherwise specified.

MIL-T-1368B requires that each tube be so tested. ASTM specification requires that all pipe over 1/8 inch O.D. and all tubes with wall thickness of 0.015 inch and over be tested to an internal hydrostatic pressure of 1000 psi.

MIL-T-1368B requires that type 1—condition 1 (annealed tubing) be subjected to flattening and flare tests.

ASTM B 165-58T does not specifically require these tests, but states that material shall be of such quality that finished product shall have chemical composition, properties, and characteristics as described. Tension tests in accordance with ASTM E 8-57T are required.

ASTM B 165-58T provides that unless otherwise specified one tension test shall be made on each lot of pipe and tubes (all material from one heat, same temper, and same specific cross section and less than 25,000 lb).

MIL-T-1368B provides that when silver brazing is indicated the permissible O.D. variations will be all negative (plus 0) with the permissible tolerance equal to the total O.D. range as shown in table III.

ASTM B 165-58T provides that special tolerance, special variations in analysis, test procedures, mechanical properties and quality requirements not covered by this specification be negotiated at time of purchase.

The ASTM specification provides that each bundle or shipping container be marked with proper identification.

The military specification specifies commercial marking on each tube of five-eighths of an inch outside diameter or larger be identified or, when specified, continuous marking in accordance with MIL STD 182.

Exclusions: ASTM B 165-58T does not cover type II, welded pipe and tube.

Other Requirements: The procurement document should specify the ordering data and include sampling and inspection requirements as indicated in military specification MIL-T-1368B.

Packaging and Packing: For domestic shipment and immediate use, tubing should be packaged according to size, in commercial containers.

For domestic shipment and storage or overseas shipment tubing, should be packaged in accordance with military specifications:

PP-B-621
MIL-C-3774
MIL-C-132

Marking: In addition to any special marking, shipping containers should be marked in accordance with MIL STD 129 Tubing, Nickel-Copper Alloy, Seamless.

CORRECTION

On page 246, THE MAGAZINE OF STANDARDS, August 1961

First column—

Change last sentence in third paragraph to read: "This specification is equivalent to MIL-I-002819B, class 3 and 4."

Under "**Divergent Areas**" "*Density,*" delete the words "and 6.0 lb for class 3 and 4."

In table of dimensions and tolerances, under the heading "Width," change the width of ASTM C 319, C 344, and C 333 from "± 1/16 in." to "± 1/8 in."

Second column—

Change MIL-1-2781C to MIL-I-2781C

Under "**Equivalent Areas**":

In first paragraph, fifth line, insert "class b" after "grade I."

In third paragraph, last line, change "grade III, class D," to "grade II, class d."

In last paragraph, sixth line, change "0.50%" to "0.50."

Under "**Divergent Areas**":

In third line, change "class D" to "class d."

In paragraph under "Thermal conductivity" change "class D" to "class d" in the first line, and delete all percentage signs.

Under "**Exclusions,**" second line, change "grade II, class C" to "grade II, class c."

• NEWS BRIEFS

ARTHUR R. WACHTER, for 20 years head of converting relations for the American Viscose Corporation, announces that he has left the company and is now establishing a textile engineering and consulting service in the Pacific Coast area. He will specialize in dyeing, finishing, printing, converting, and in fabric supply problems.

Mr Wachter was the originator of the American Viscose Corporation's quality standards which were the basis for the American Standard performance requirements for textiles, L22. Mr Wachter has been active in ASA since 1948. He has not only worked on Sectional Committee L22, but also on L24, Institutional Textiles; L14, Textile Test Methods; and on L23, the U.S. committee for ISO/TC 38 on Textiles. Mr Wachter is widely acquainted in the textile industry in Europe, Latin America, and Japan, as well as in the United States. In 1945 he received the Samuel Salvage Award, and in 1951 was named the Textile Man of the Year.

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LLOYD R. JONES has been appointed manager of engineering of the Dictaphone Corporation, Bridgeport, Connecticut. He has been assistant to the vice-president since 1956 and chief commercial engineer for the previous three years. Mr Jones has served as chairman of the X2/X4 Subcommittee on Dictation Equipment since 1957.

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NINE TECHNICAL SESSIONS have been scheduled by the Indian Standards Institution during the Sixth Indian Standards Convention at Kanpur, December 25-31, 1961. These sessions will include building design and construction; certification marking of products; packaging; company standardization; the metric system in engineering industries; the universal count system in textiles; housing and preservation of documents; safe use of electricity in the home; and nondestructive testing of metals.

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"THE INTERNATIONAL standardization work in the fields of tubes and semiconductors is of utmost importance to our export business in many ways," declared Virgil M. Graham of the Electronic Industries Association, recently. Mr Graham is vice-president of the U.S. National Committee of the International Electrotechnical Commission. He is technical advisor to USNC on the work of IEC/TC 39, Electronic Tubes and Valves, and IEC/TC 47, Semiconductor Devices, and is also chairman of IEC/TC 47. "Your effort has greatly advanced the U.S. positions in these committees," he told M. A. Acheson, who had served as chief U.S. delegate at the recent meeting of IEC/TC 47 at Interlaken.

"Every advance in the status of international standardization makes easier the establishment of subsidiary and affiliate operations by American companies," Mr Graham commented. "Such international standardization is also insurance that our industry will have a fair advantage in meeting competition of the increasing imports of electron devices. One of the most important achievements has been the general acceptance of the U.S.-generated standards on methods of testing so that our products can be accepted abroad on the same standards as our products are domestically."

Virgil Graham (left) with M. A. Acheson, chief U.S. delegate at IEC/TC 47 meeting

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IN ANSWER to the question "Have American Standards hurt foreign manufacturers?"[1] Naoshi Hagio, managing director, Export Division, Tokyo Shibaura Electric Co Ltd, has this to say:

"We in Japan, without question, are meeting some inconvenience. However, we must face the existing situation and meet customers' requirements, not only complying with the American Standards but with others, such as British standards, if we are to export our equipment and machinery.

"Japanese standards are quite similar to American Standards. For equipment designed and manufactured to buyers' specifications, we find little or no difficulty in meeting the requested standards, especially those regarding technical performance. Our manufacturing is in accord with the Japanese Industrial Standard (JIS). When necessary, we supply the clients with one grade higher in quality.

"Japan uses the metric system, whereas America, of course, uses the ft-lb system. This fundamental difference in measurement units is giving us some inconvenience. Though it may be considered a small matter, the difference between the thread size of Japanese and American bolts and nuts forces our engineers to spend many hours discussing the matter with our clients.

"Another problem exists in the underdeveloped countries of Southeast and Middle-east Asia. Owing to the long influence by the European countries, they are following British standards, as well as some French and German standards. Japan must adjust its equipment to the existing standards in these areas as well."

[1] In the "Points of View" section of *Products Engineering*, Dec. 19, 1960.

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TWO ADDITIONAL standard samples of radionuclides—iron 55 and

THE INTERNATIONAL ORGANIZATION for Standardization has announced with profound regret the death of Max Reichert, honorary director general of the Belgian Standards Institute and former treasurer of ISO.

Mr Reichert had been a pioneer in standardization in Belgium and internationally. He had worked on committees of the prewar International Federation of National Standardizing Associations (ISA), and in 1946 took part in the London Conference at which it was decided to organize the International Organization for Standardization. Until his retirement in 1956, Mr Reichert represented Belgium in the ISO Council.

promethium 147—are being issued by the National Bureau of Standards. These two standards are part of a group of 51 now available.

Both of the standards have wide applications for medical and industrial laboratory purposes. Iron 55, an electron-capturing nuclide with a half-life of 2.7 years, decays by x-ray and Auger-electron emission directly to the ground state. It is used extensively as a tracer both in biological and industrial research.

Promethium 147 is a pure beta emitter utilized for generation of low-energy x-rays and energy calibration standards for x- and gamma-ray spectrometers. It has a half-life of 2.5 years. In addition to other research applications, this radionuclide is incorporated in luminescence markers and is being considered for use in nuclear batteries.

Both of the standard samples may be ordered under the general licensing provisions of the Atomic Energy Act of 1954. The iron 55 standard sample No. 4929 and the promethium 147 standard sample No. 4940 may be purchased for $36.00 and $40.00 respectively. Both samples are in solution form (approximately 3 ml), and have nominal activities of 5 x 10^4 dps/g. The iron 55 solution contains lug/ml $FeCl_3$ as carrier, while the promethium 147 solution is carrier free. All orders for the radioactivity standards should be addressed to (Miss) Elizabeth M. Zandonini, Radioactivity Standard Samples, Radioactivity Section, National Bureau of Standards, Washington 25, D. C.

AMERICAN STANDARDS

Just Published . . .

If your company is a member of the American Standards Association, it is entitled to receive membership service copies of these newly published American Standards. The ASA contact in your company receives a bimonthly announcement of new American Standards, which also serves as an order form. Find out who your ASA contact is and order your American Standards through him. He will make sure your company receives the service to which it is entitled.

BUILDING AND CONSTRUCTION

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D 250-60; ASA A109.4-1961 (Revision of ASTM D 250-56; ASA A109.4-1956) $0.30

Asphalt-saturated asbestos felts, either with or without perforations, 36 or 32 in. wide, composed of asbestos felt saturated, but not coated, with asphalt for use in membrane system of waterproofing and in construction of built-up roofs.

Sponsor: American Society for Testing Materials

CINEMATOGRAPHY

35mm Photographic Sound Motion-Picture Film, Usage in Projector, PH22.3-1961 (Revision of PH22.3-1954) $0.40

Specifies the manner in which a 35mm sound motion-picture release print passes through the projector, including the direction of travel, orientation of the picture image, rate of picture projection, and the length of the film path from the picture aperture to the photographic sound-scanning point. This standard applies only to positive prints made from conventional negatives.

16mm 3000-Cycle Flutter Test Film, Photographic Type, PH22.43-1961 (Revision of PH22.43-1953) $0.40

Specifies a 3000-cycle sound test film for use in determining the amount of flutter in 16mm sound motion-picture projectors.

Intermodulation Tests for 16mm Variable-Density Photographic Sound Prints, PH22.51-1961 (Revision of Z22.51-1946) $0.50

Specifies the technique of measuring, by the intermodulation method, the signal distortion introduced during recording, processing, printing, and reproduction of 16mm variable-density sound motion-picture prints.

Sponsor: Society of Motion Picture Television Engineers

CONSUMER GOODS

Liquid Toilet Soap, Specifications for, ASTM D 799-60T; ASA K60.14-1961 (Revision of ASTM D 799-51; ASA K60.14-1952) $0.30

General requirements for two types of liquid toilet soap: liquid (15 percent minimum anhydrous soap), and concentrate (35 percent anhydrous soap).

Sponsor: American Society for Testing Materials

HIGHWAY TRAFFIC

Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1-1961 (Revision of D6.1-1955) $2.00

Standard design, shape, colors, lettering, illumination and reflectorization of traffic signs; standard types, materials, colors, dimensions for highway striping and other highway markings; standard classification, design, color, shapes, lettering, and illumination of traffic signals. Includes special provisions for high-speed throughways.

Sponsors: National Joint Committee on Uniform Traffic Control Devices—American Association of State Highway Officials; Institute of Traffic Engineers; National Committee on Uniform Traffic Laws and Ordinances; National Association of County Officials; American Municipal Association

METALLURGY

Zinc-Coated (Galvanized) Steel Tie Wires, Specifications for, ASTM A 112-59; ASA G8.4-1961 (Revision of ASTM A 112-33; ASA G8.4-1935) $0.30

Covers zinc-coated steel tie wires with Class A, B, and C coating weights, in cut lengths for use in tying zinc-coated telephone and telegraph line wire to insulators.

Zinc Coating (Hot-Dip) on Iron and Steel Hardware, Specifications for, ASTM A 153-60; ASA G8.14-1961 (Revision of ASTM A 153-59; ASA G8.14-1959) $0.30

Specifies grade of zinc to be used; weight of coating and weight of coating test; distribution of coating, adherence of coating, and prevention of embrittlement.

Sponsor: American Society for Testing Materials

Uncoated Wrought Iron Sheets, Specifications for, ASTM A 162-60T; ASA G23.1-1961 (Revision of ASTM A 162-39; ASA G23-1939) $0.30

Specifications for wrought iron sheets for use in roofing, siding, corrugating, and moderate forming.

Sponsor: American Society for Testing Materials

Gray Iron Castings, Specifications for, ASTM A 48-60T; ASA G25.1-1961 (Revision of ASTM A 48-56; ASA G25.1-1956) $0.30

Covers gray iron castings intended for general engineering use where tensile strength is a major consideration. Castings are classified on the basis of tensile strength of iron in separately cast test bars.

Sponsor: American Society for Testing Materials

Mild-to-Medium-Strength Carbon-Steel Castings for General Application, Specifications for, ASTM A 27-60; ASA G50.1-1961 (Revision of ASTM A 27-58; ASA G50.1-1959) $0.30
Specifications for mild- to medium-strength carbon-steel castings for general application as distinguished from carbon-steel and alloy-steel castings requiring a tensile strength in excess of 7,000 psi.
Sponsor: American Society for Testing Materials

MISCELLANEOUS

Thermometers, Specifications for, ASTM E 1-60; ASA Z71.1-1961 (Revision of ASTM E 1-60; ASA Z71.1-1960) $0.75
Specifications for etched-stem liquid-in-glass thermometers graduated in Centigrade or Fahrenheit degrees which are frequently specified in methods of the ASTM. Various thermometers are covered in a table.
Sponsor: American Society for Testing Materials

PHOTOGRAPHY

Photographic Sheet Paper for General Use (Inch Sizes), Dimensions for, PH1.12-1961 (Revision of PH1.12-1953) $0.40
Gives dimensions and tolerances for photographic sheet paper. Information is also given on requirements for squareness and the method of measuring sheets.
Sponsor: Photographic Standards Board

Sensitometric Exposure of Artificial-Light-Type Color Films, Method for, PH2.20-1960 $1.00
The sensitometric illuminants specified herein are intended for use with three-component subtractive color-taking films designed for photography by artificial-light illumination. This use applies to reversal and negative films for general-purpose work.
Sponsor: Photographic Standards Board

Photographic Flashlamps—ASA Type 250, Dimensions for, PH3.36-1961 $0.40

Dimensions for Photographic Flashlamps—ASA Type 240, PH3.38-1961 $0.40
Sponsor: Photographic Standards Board

Total Hardness of Water for Photographic Processing, Method for Determining, PH4.28-1961 $0.40
Furnishes simple test procedure for measuring hardness of water.

Photographic Grade Ammonium Sulfate, Specification for, PH4.184-1961 (Revision of PH4.184-1953) $0.40

Photographic Grade Sodium Carbonate Monohydrate, Specification for, PH4.227-1961 (Revision of PH4.227-1954) $0.40

Photographic Grade Sodium Carbonate, Anhydrous, Specification for, PH4.228-1961 (Revision of PH4.228-1954) $0.40

Photographic Grade Sodium Tetraborate, Decahydrate, Specification for, PH4.230-1961 (Revision of PH4.230-1954) $0.40

Photographic Grade Sodium Metaborate, Octahydrate, Specification for, PH4.231-1961 (Revision of PH4.231-1954) $0.40

Photographic Grade Sodium Tetraborate, Pentahydrate, Specification for, PH4.233-1961 (Revision of PH4.233-1954) $0.40

Photographic Grade Sodium Thiosulfate, Anhydrous (Anhydrous Hypo), Specification for, PH4.250-1960 (Revision of PH4.250-1953) $0.40

Photographic Grade Sodium Thiosulfate, Crystalline (Crystal Hypo), Specification for, PH4.251-1960 (Revision of PH4.251-1953) $0.40

Photographic Grade Ammonium Thiosulfate Solution (Ammonium Hypo Solution), Specification for, PH4.252-1960 (Revision of PH4.252-1953) $0.50

Photographic Grade Ammonium Thiosulfate (Ammonium Hypo), Specification for, PH4.253-1960 (Revision of PH4.253-1953) $0.50

Photographic Grade Sodium Sulfite, Anhydrous, Specification for, PH4.275-1961 (Revision of PH4.275-1952) $0.50
Purity requirements and test methods for photographic processing chemicals.
Sponsor: Photographic Standards Board

Speed Classifications for Intraoral Dental Radiographic Film: Diagnostic Grade, PH6.1-1961 $0.40
Provides a method of classifying films used with direct x-ray or gamma-ray exposure, or both, for intraoral dental radiography according to speed. Specifies limits for each speed group.
Sponsor: American Dental Association

PIPE AND FITTINGS

Standard Strength Unglazed Clay Pipe, Specifications for, ASTM C 261-60T; ASA A106.4-1961 (Revision of ASTM C 261-59T; ASA A106.4-1960) $0.30
Specifications for standard strength unglazed clay pipe intended to be used for conveyance of sewage, industrial wastes, and storm water and other liquids.
Sponsor: American Society for Testing Materials

Welded Wrought-Iron Pipe, Specifications for, ASTM A 72-59T; ASA B36.2-1961 (Revision of ASTM A 72-56; ASA B36.2-1958) $0.30
Covers "standard weight," "extra strong," and "double extra strong" wrought-iron, black or galvanized pipe intended for coiling, bending, flanging, and other special purposes.
Sponsor: American Society for Testing Materials

TEXTILES

Colorfastness to Pleating, AATCC 31-1958; ASA L14.63-1960 (Revision of L14.63-1956) $0.40

Resistance to Water Penetration (Impact Penetration Test), AATCC 42-1957; ASA L14.78-1960 (Revision of L14.78-1956) $0.40

Colorfastness to Water: Distilled or Deionized Water, Sea Water, and Chlorinated Pool Water, AATCC 63-1957; ASA L14.83-1960 (Revision of L14.83-1956) $0.40
Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists

In Process . . .

As of September 11, 1961

BUILDING AND CONSTRUCTION

In Standards Board

Chemical Analysis of Portland Cement, Method of, Part I, ASTM C 114-58; ASA A1.5- (Revision of ASTM C 114-53; ASA A1.5-1954)

Fineness of Portland Cement, Method of Test by Turbidimeter, ASTM C 115-58; ASA A1.7- (Revision of ASTM C 115-53; ASA A1.7-1954)

Air Content of Hydraulic Cement Mortar, Method of Test for, ASTM C 185-59; ASA A1.9- (Revision of ASTM C 185-53T; ASA A1.9-1954)

Heat of Hydration of Portland Cement, Method of Test, ASTM C 186-55; ASA A1.10- (Revision of ASTM C 186-53; ASA A1.10-1954)

Normal Consistency of Hydraulic Cement, Method of Test, ASTM C 187-58; ASA A1.11- (Revision of ASTM C 187-49; ASA A1.11-1950)

Tensile Strength of Hydraulic Cement Mortars, Method of Test, ASTM C 190-59; ASA A1.14- (Revision of ASTM C 190-49; ASA A1.14-1950)

Time of Setting of Hydraulic Cement, Method of Test by Vicat Needle, ASTM C 191-58; ASA A1.15- (Revision of ASTM C 191-52; ASA A1.15-1954)

Time of Setting of Hydraulic Cement, Method of Test by Gillmore Needle, ASTM C 266-58T; ASA A1.17- (Revision of ASTM C 266-51T; ASA A1.17-1954)

Natural Cement, Specification for, ASTM C 10-54; AASHO M 135-49; Federal SS-C-185; ASA A1.18-

Fineness of Portland Cement, Method of Test by Air-Permeability Apparatus, ASTM C 204-55; AASHO T 153-52; Federal 158; ASA A1.19-

Flow Table for Use in Tests of Hydraulic Cement, Specification for, ASTM C 230-57T; ASA A1.20-

Slag Cement, Specification for, ASTM C 358-58; ASA A1.21-

Cement Content of Hardened Portland Cement Concrete, Method of Test, ASTM C 85-54; ASA A1.22-

Mechanical Mixing of Hydraulic Cement Mortars of Plastic Consistency, Method of, ASTM C 305-59T; ASA A1.23-

Air-Entraining Additions for Use in the Manufacture of Air-Entraining Portland Cement, Specification for, ASTM C 226-58T; ASA A1.24-

Portland-Pozzolan Cement, Specification for, ASTM C 340-58T; ASA A1.25-
Sponsor: American Society for Testing Materials

Interior Marble, Specifications for, A94.1- (Revision of A94.1-1948)

Thin Exterior Marble Veneer (Two Inches and Less in Thickness), Specifications for, A94.2- (Revision of A94.2-1955)

Thin Exterior Marble in Curtain or Panel Walls, Specifications for, A94.3- (Revision of A94.3-1955)

Sponsor: Marble Institute of America

Reaffirmation Being Considered

Specific Gravity of Hydraulic Cement, Method of Test, ASTM C 188-44; ASA A1.12-1948

Sponsor: American Society for Testing Materials

CHEMICAL

In Board of Review

Common Name for the Pest Control Chemical 3-amino-*s*-triazole (or 3-amino-1,2,4-triazole): amitrole, K62.24-

Sponsor: U.S. Department of Agriculture

In Standards Board

Common Name for the Pest Control Chemical 2-chloro-4-ethylamino-6-isopropylamino-*s*-triazine: atrazine, K62.26-

Common Name for the Pest Control Chemical 2-chloro-4,6-bis(diethylamino)-*s*-triazine: chlorazine, K62.27-

Sponsor: U.S. Department of Agriculture

CINEMATOGRAPHY

In Standards Board

35mm Photographic Sound Motion-Picture Film Usage in Camera, PH22.2- (Revision of PH22.2-1954)

16mm Multi-Azimuth Test Film, Magnetic Type, PH22.126-

Sponsor: Society of Motion Picture and Television Engineers

DRAWINGS, SYMBOLS AND ABBREVIATIONS

American Standard Approved

American Standard Drafting Manual, Section 14, Mechanical Assemblies, Y14.14-1961

Sponsors: American Society of Mechanical Engineers; American Society for Engineering Education

In Board of Review

Graphic Symbols for Process Flow Diagrams in the Petroleum and Chemical Industries, Y32.11-

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRICAL AND ELECTRONIC

American Standards Approved

Natural Muscovite Mica Based on Visual Quality, Specifications for, ASTM D 351-60T; ASA C59.27-1961 (Revision of ASTM D 351-57T; ASA C59.27-1957)

Sponsor: American Society for Testing Materials

Glow Lamps, Method for the Designation of, C78.381-1961

Glow Lamps, Methods of Measurement, C78.385-1961

Sponsor: Electrical Standards Board

In Board of Review

Supplements to American Standard Requirements, Terminology, and Test Code for Distribution Power and Regulating Transformers and Reactors Other Than Current Limiting Reactors, C57.12-

General, C57.12.00- (Revision of C57.12.00-1958)

Terminology, C57.12.80- (Revision of C57.12.80-1958)

Test Code, C57.12.90- (Revision of C57.12.90-1958)

Sponsor: Electrical Standards Board

In Standards Board

Method of Measurement of Differential Gain and Differential Phase, (60 IRE 23.S1) ASA C16.33-

Sponsor: Institute of Radio Engineers

GAS-BURNING APPLIANCES

In Standards Board

Approval Requirements for:

Domestic Gas Ranges, Volume I, Free-Standing Units, Z21.1.1- (Revision of Z21.1.1-1959 and Z21.1.1a-1960)

Domestic Gas Ranges, Volume II, Built-In Domestic Cooking Units, Z21.1.2- (Revision of Z21.1.2-1959 and Z21.1.2a-1960)

Domestic Gas Clothes Dryers, Z21.5- (Revision of Z21.5-1959 and Z21.5a-1960)

Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Z21.13.1- (Revision of Z21.13.1-1958, Z21.13.1a-1959, and Z21.13.1b-1960)

Central Heating Gas Appliances, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2- (Revision of Z21.13.2-1960)

Central Heating Gas Appliances, Volume III, Gravity and Fan-Type Floor Furnaces, Z21.13.3- (Revision of Z21.13.3-1959, Z21.13.3a-1960, and Z21.13.3b-1960)

Central Heating Gas Appliances, Volume IV, Gravity and Fan-Type Vented Recessed Heaters, Z21.13.4- (Revision of Z21.13.4-1958, Z21.13.4a-1959, and Z21.13.4b-1960)

Gas Unit Heaters, Z21.16- (Revision of Z21.16-1960)

Refrigerators Using Gas Fuel, Z21.19- (Revision of Z21.19-1960)

Gas Appliance Thermostats, Z21.23- (Revision of Z21.23-1940)

Gas-Fired Duct Furnaces, Z21.34- (Revision of Z21.34-1958, Z21.34a-1959, and Z21.34b-1960)

Gas-Fired Absorption Summer Air-Conditioning Appliances, Z21.40.1- (Revision of Z21.40-1959 and Z21.40a-1960)

Gas Engine Powered Summer Air-Conditioning Appliances, Z21.40.2-

Addenda

Addenda Z21.3a- to Approval Requirements for Hotel and Restaurant Gas Ranges and Unit Broilers, Z21.3-1960

Addenda Z21.6a- to Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1960

Addenda Z21.10.1a- to Approval Requirements for Gas Water Heaters, Volume I, Z21.10.1-1960

Addenda Z21.10.2b- to Approval Requirements for Gas Water Heaters, Volume II, Z21.10.2-1959 and Z21.10.2a-1960

Addenda Z21.10a- to Approval Requirements for Gas Water Heaters, Volume III, Z21.10.3-1960

Addenda Z21.27b- to Approval Requirements for Hotel and Restaurant Gas Deep-Fat Fryers, Z21.27-1959 and Z21.27a-1960

Addenda Z21.28a- to Approval Requirements for Portable Gas Baking and Roasting Ovens, Z21.28-1960

Sponsor: American Gas Association

MECHANICAL

In Standards Board

Spindle Flanges for Precision Boring Machines, B5.39-

Sponsors: American Society of Tool and Manufacturing Engineers; American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Slotted and Recessed Head Wood Screws, B18.6.1- (Revision of B18.6.1-1956)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

MISCELLANEOUS

In Standards Board

Sieves for Testing Purposes, Specifications for, ASTM E 11-60T; ASA Z23.1- (Revision of ASTM E 11-58T; ASA Z23.1-1959)

Sponsors: American Society for Testing Materials; National Bureau of Standards

PHOTOGRAPHY

American Standards Approved

Determining the Safety Time of Photographic Darkroom Illumination, Procedure for, PH2.22-1961 (Revision of Z38.8.13-1950)

Lighting Conditions for Viewing Photographic Color Prints and Transparencies, PH2.23-1961

Sponsor: Photographic Standards Board

Picture Sizes for Roll and 35-mm Still-Film Cameras, PH3.39-1961 (Revision of Z38.4.8-1950)

Sponsor: Photographic Standards Board

Photographic Grade *p*-Benzyl-aminophenol Hydrochloride, Specification for, PH4.135-1961 (Revision of PH4.135-1954)

Photographic Grade Benzyl Alcohol, Specification for, PH4.181-1961 (Revision of PH4.181-1954)

Sponsor: Photographic Standards Board

American Standard Withdrawn

Photographic Wetting Agents, Requirements for, Z38.8.14-1950

Sponsor: Photographic Standards Board

PIPE AND FITTINGS

American Standards Approved

Steel Pipe Flanges and Flanged Fittings, B16.5-1961 (Revision of B16.5-1957, including Addendum B16.5a-1960)

Sponsors: American Society of Mechanical Engineers; Manufacturers Standardization Society of the Valve and Fittings Industry; Mechanical Contractors Association of America

Addendum B31.1a-1961 to American Standard Code for Pressure Piping, B31.1-1955 (Revision of B31.1a-1960)

Addendum B31.3a-1961 to American Standard Petroleum Refinery Piping, B31.3-1959 (Revision of B31.3a-1960)

Addendum B31.4a-1961 to American Standard Oil Transportation Piping, B31.4-1959 (Revision of B31.4a-1960)

Addendum B31.8a-1961 to American Standard Gas Transmission and Distribution Piping Systems, B31.8-1958 (Revision of B31.8a-1960)

Sponsor: American Society of Mechanical Engineers

PLASTICS

In Standards Board

Ethyl Cellulose Molding and Extrusion Compounds, Specification for, K64.1- (Revision of K64.1-1959)

Sponsor: American Society for Testing Materials

SAFETY

American Standards Approved

Safety Code for the Identification of Gas-Mask Canisters, K13.1-1961 (Revision of K13.1-1950)

Sponsor: *National Safety Council*

Prevention of Dust Explosions in Woodworking and Wood Flour Manufacturing Plants, Safety Code for, Z12.20-1961 (Revision of Z12.5-1959 and Z12.8-1959)

Sponsor: National Fire Protection Association

In Standards Board

Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying, Z33.1- (Revision of Z33.1-1959)

Sponsor: National Fire Protection Association

American Standard Reaffirmed

Safety Code for Woodworking Machinery, O1.1-1954 (R1961)

Sponsors: Association of Casualty and Surety Companies—Accident Prevention Department; International Association of Governmental Labor Officials

AMERICAN STANDARDS PROJECTS

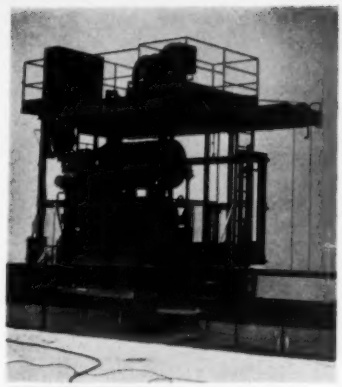
Power-Operated Platforms Used for Exterior Building Maintenance (Commonly Called Powered Platforms), A120—

Sponsor: National Safety Council

During the course of its work, Sectional Committee A39, Safety Code for Window Cleaning, found itself faced with the problem of providing safety standards for the new method of window washing by means of "powered platforms." These platforms are raised and lowered on the outside of the building, by means of electrically operated machinery. This enables window washers to reach the glass areas of the newer-type buildings which do not have movable windows, and also those that have wall sections made of glass that must be washed. The platforms are also used for general building maintenance. This subject goes far beyond the scope of Sectional Committee A39. Recognizing this, the members of Sectional Committee A39, representing the groups concerned, requested that the American Standards Association initiate a new project and organize a new sectional committee to develop safety standards for powered platforms. This recommendation has now been approved, and the new work will go forward under the following scope:

"Safety standards for the design, construction, installation, operation, inspection, testing, maintenance, alteration, and repair of power-operated platforms used for exterior building maintenance, which are hereafter referred to as powered platforms.

"Powered platforms are defined as power-operated equipment, primarily used for exterior building maintenance, designed for and installed on a specific building or structure to position a suspended working platform carrying one or more workmen or operators, or both, to any desired location on the face of the building or structure."



Photos by L. A. Carvey

Power-operated platforms for window cleaning and exterior building maintenance of new Time-Life Building, New York. At top—Control equipment located on roof.

American Standard Tolerances for

Ball and Roller Bearings

ASA
Reg. U. S. Pat. Off.
B3.5-1960
Revision of
B3.5-1951
UDC 621.822.7 : 8.621.753.1

Errata

The title of Table 9, on page 15, should be changed to read Snap Ring and Groove *Dimension Tolerances*.

In Table 9 the first tolerance in column "C" should be changed from −0.002 to +0.000.

August 25, 1961

Transmission Chains and Sprocket Teeth, B29—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

D. C. Heitshu, new chairman of the committee, reports: "We are endeavoring to keep our areas of the American Standards as simple, and as up-to-date, as possible. The general use of chain drives, in so many different industries, attests to the over-all soundness of the chain and sprockets standards."

Mr Heitshu is product design manager, New Holland Machine Company (Division of Sperry Rand Corporation). "As a user of chain," he comments, "I must express my appreciation of the sincere, diligent and time-consuming work put into standards activities by the producer members of the committee."

The committee plans to develop additional standards for some of the lesser used types of chain, for sprocket teeth for steel detachable link chain, and for new needs in either chains or sprockets, Mr Heitshu reports. Improved chain ratings, and clarification of current ratings are also under consideration, as is the question of proper coordination and cooperation with the International Organization for Standardization.

The committee also hopes to broaden the base of its activities by increasing its producer and user representation. "The usefulness of standards depends upon the soundness of the standards, and to be sound the standards must be generated by a

D. C. Heitshu

group having a background as wide as is practical," Mr Heitshu points out. "With this in mind, we desire representation for every organization closely associated with transmission chains and sprockets, as we feel certain the public will benefit."

Decimal Dimensioning Scales, Z75—

Sponsor: American Society of Tool and Manufacturing Engineers

The American Standard Scales for Use with Decimal-Inch Dimensioning, Z75.1-1955, had been approved by ASA under the General Acceptance Method. Since the standard should now be reviewed and either reaffirmed or revised, a new project has been approved by ASA under the Sectional Committee Method. The American Society of Tool and Manufacturing Engineers has accepted the sponsorship and will organize the committee.

Small Containers, MH3—

Sponsor: Packaging Institute

Work on standardization of containers for petroleum products has now been placed under the Sectional Committee Method. This action was taken on recommendation of a general conference held in May 1961. Scope of the project will include terminology, sizes, dimensions and tolerances, methods of measurement, marking, and testing. Specifications are to be drawn up only for containers having a volume less than five gallons.

The new committee will be responsible for reviewing the American Standards for motor oil cans already approved under the Existing Standards Method, to determine whether these standards should be revised.

U.S. Advisory Committee for ISO/TC 6, Paper—

R. B. Hobbs, National Bureau of Standards, is chairman of the new U.S. committee charged with the responsibility of developing the U.S. viewpoint for presentation to the International Organization for Standardization's Technical Committee 6 on Paper. A. J. Winchester, Technical Association of the Pulp and Paper Industry, New York, is secretary.

A number of subcommittees have been set up to handle the various facets of the committee's work:

1. Nomenclature, Terminology and Definitions. Dr E. R. Laughlin, American Paper and Pulp Association, chairman

2. Test Methods. Professor C. E. Brandon, Technical Association of the Pulp and Paper Industry, chairman

3. Dimensions. L. W. Conner, U.S. Post Office, chairman

4. Packaging. H. A. Birdsall, American Society for Testing Materials, chairman

5. Raw Materials. Professor C. E. Brandon, Technical Association of the Pulp and Paper Industry, chairman.

Vermiculite Concrete, A122—

Sponsors: Vermiculite Institute; American Society for Testing Materials

Standard specifications for vermiculite concrete and its design and installation will be developed under this newly approved project.

In discussion during the general conference which recommended that the American Standards Association initiate this project, it was brought out that vermiculite has a number of uses: (1) as the lightest of lightweight aggregates for concrete used for construction purposes; (2) as insulation; (3) as an inert filler around machinery. It was indicated that

A new Packaging and Handling Standards Board has just been organized to coordinate the work of sectional committees in this field. Elmer Mattocks (seated at far end of table) presided at the Board's organization meeting. Vincent Grey, ASA staff, (standing) explained the Board's functions under ASA procedure.

standards developed by the sectional committee would undoubtedly take all these uses into consideration.

Combined Visual-Aural Magnetic Recording for Television, C98—

Sponsor: Society of Motion Picture and Television Engineers

Standard definitions and engineering standards for combined visual-aural magnetic tape (commonly known as "video tape") records of television signals are to be developed by a sectional committee under this newly approved project. "Video tape" is used for recording and rebroadcasting television programs.

"It was an important step forward for the industry when a request by the Society for establishment of an ASA sectional committee on video tape recording was accepted by a general conference held by the American Standards Association," commented the *SMPTE National News and Notes* in its September issue. The recommendations of the general conference led to initiation of the project by ASA.

Electric Fences, C69—

Sponsor: National Bureau of Standards

Leon J. Urben, who joined the staff of the National Safety Council early this year as agricultural engineer, is serving as secretary of Sectional Committee C69. As reported by R. L. Lloyd, recently named chairman of the committee, it is planned that the reorganization of the committee will be completed and a meeting held before the end of the year.

Leon J. Urben

Mr Urben is working with the Council primarily on the technical side of farm safety. He had been senior design engineer with the J. I. Case Company before affiliating with the Council and has an understanding of farm problems and conditions.

STANDARDS ALIVE

A Guest Column

by Dr. E. E. Lockhart

Dr Lockhart is Scientific Director of the Coffee Brewing Institute.

COFFEE MAKING – an everyday chore, done in nearly every home with hardly a thought – seems an unusual subject for an American Standard. But homemakers, the coffee industry, and manufacturers of coffee-making appliances, represented on Sectional Committee Z61, Home Kitchen Utensils, are finding it is not as simple as it seems.

One phase of the problem is the recipe; the second is what the homemaker expects as an adequate serving.

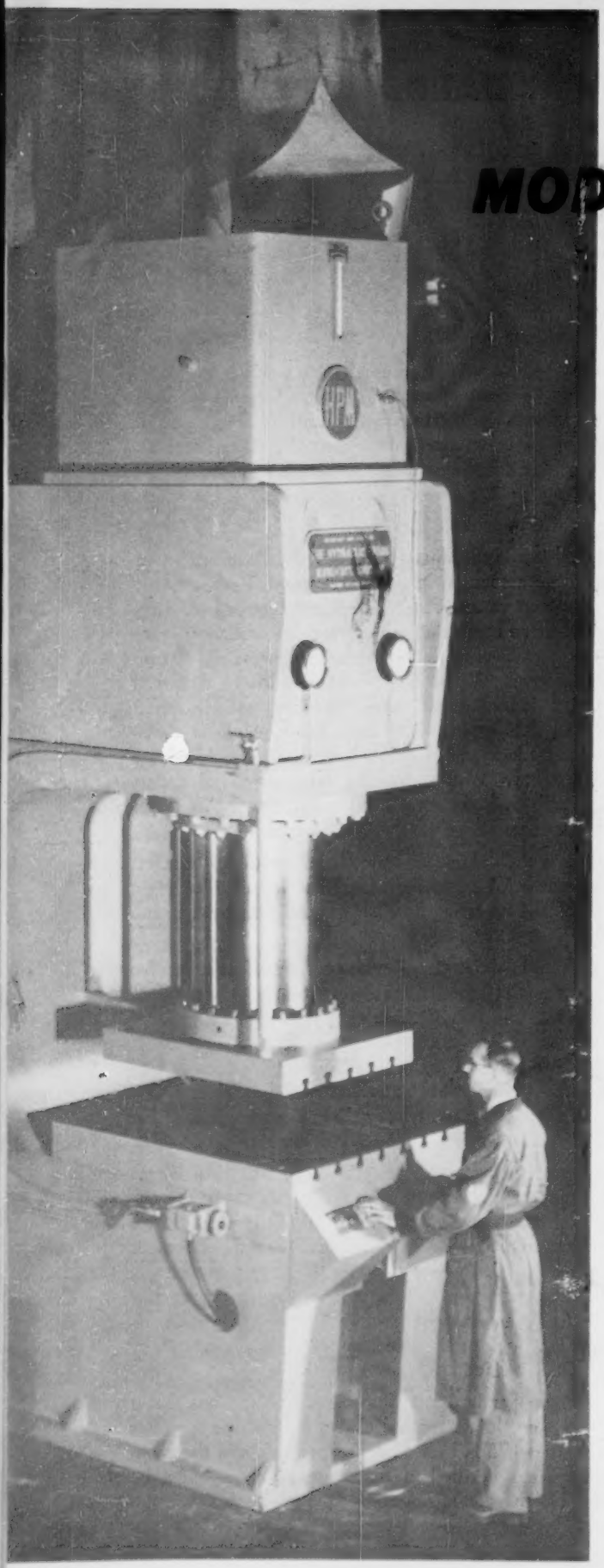
On the first, history shows that the tablespoon played an important role in determining the amount of coffee to be used. However, the ordinary home tablespoon varies in size. Eventually, recipes were refined to specify a standard measuring tablespoon. But variations continued, the result of such loosely defined terms as "rounded," "heaping," and similar adjectives. The next step was injection of the word "level" into the recipe. However, the terms "rounded" and "heaping" had obviously indicated that something more than one level tablespoon was needed to produce an acceptable beverage. So recipes were gradually changed to two level measuring tablespoons of coffee. Coffee measuring tools holding two level measuring tablespoons of coffee are now widely used.

The next question is the volume of water to use with this amount of coffee. The homemaker came to consider that from six to eight ounces was about the right amount; and "six ounces" was written into recipes, to simplify instructions.

Which leads to the next question—serving size. Most cups for table use have a capacity of more than seven ounces. A serving of less than five ounces in any one of these cups is skimpy. Two level measuring tablespoons, or one standard measure of coffee, and six ounces of water yield approximately five and one-half ounces of coffee. This is the volume which has been adopted by the coffee industry, and by most home economists, for two or three decades, and is the one found in all authoritative literature on the subject.

The serving size of a cup of coffee can be important to a homemaker, who judges the number of coffee cups she can expect by the markings on the side of the coffee maker. It is also important to the manufacturers of coffee makers. Their problem is competition. A manufacturer who marks the amount of water to use per cup on the basis of five ounces, or perhaps even four ounces, provides more, but smaller, cups of coffee than one who uses six ounces per cup as the basis for his markings. Such tactics can lead only to consumer confusion and perhaps dissatisfaction.

Here is an interesting standardization problem. It is obvious that a point of agreement – on the amount of coffee, the volume of water per coffee measure, the yield in brewed coffee per cup, and the number and size of cups as indicated in the coffee maker – must be found. This is the objective of the Z61 committee.



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